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DiMAGE Scan Dual III

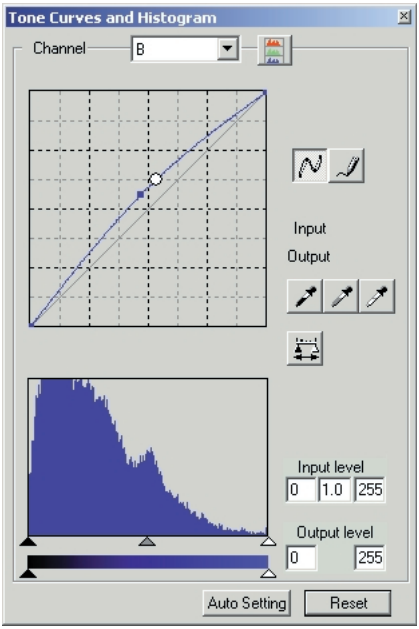
AF-2840

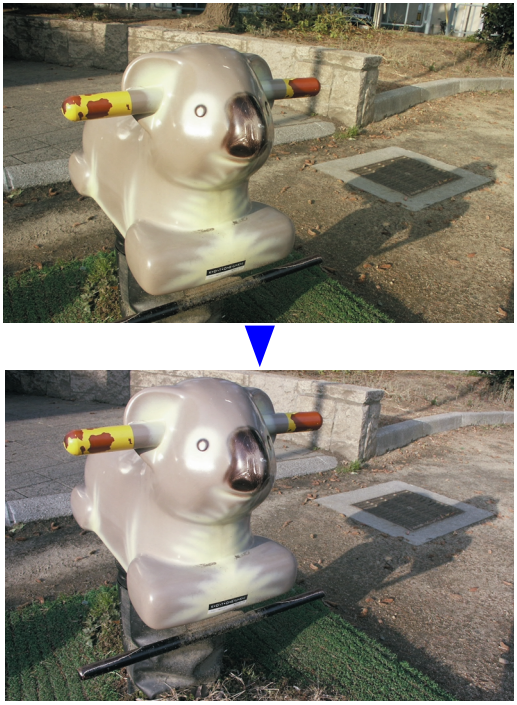
E **INSTRUCTION MANUAL**

9222-2889-11 AV-A209

Tone-curve corrections

By selecting individual color channels on the tone curve, adjustments to the overall color of an image can be made. In this example, the image is too yellow. By moving the blue curve up, the image looks more neutral. For more on tone curve corrections, see page 71.





Selective-color palette

In the original image, the colors were muted making the whole scene flat. By subtracting cyan from the red channel, the bridge and faint details in the clouds could be accentuated. The cloud detail was further enhanced by subtracting yellow from the blue channel. For more on the selective color palette, see page 79.

Thank you for purchasing this Minolta product. Please take the time to read through this instruction manual so you can enjoy all the features of your new scanner.

This manual contains information regarding products introduced before October, 2002. To obtain information for products released after this date, contact a Minolta service facility listed on the back cover of this manual.

This product is designed to work with accessories manufactured and distributed by Minolta. Using accessories or equipment not endorsed by Minolta may result in unsatisfactory performance or damage to the product and its accessories.

This instruction manual does not provide instruction in the basic operation of the personal computers, or the basic operation of Windows or Macintosh operating systems; refer to the manuals supplied with the computer.

The examples in this manual use Windows software. The appearance of the screens may differ from the examples when using Macintosh or other Windows operating systems.

Every precaution has been taken to ensure the accuracy of this material. Specifications in this manual are based on the latest information available at the time of printing and are subject to change without notice. Minolta is not responsible for any loss or damage caused by the use of this software.

This instruction manual may not be copied either in part or in its entirety without the prior permission of Minolta.

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Read and understand all warnings and cautions before using this product.

⚠WARNING

- Use only within the voltage range specified on the unit. Inappropriate current may cause damage or injury through fire or electric shock.
- Only use the AC adapter (model specified by Delta Electronics, Inc. ADP-20LB or Ya Hsin Industrial Co., Ltd. 019-240840) supplied with the product within the voltage range indicated on the adapter unit. Using other adapters or an inappropriate current may cause damage or injury through fire or electric shock.
- Do not disassemble this product. Electric shock may cause injury if a high-voltage circuit inside the product is touched. Take the product to a Minolta Service Facility when repairs are required.
- Immediately unplug the unit and discontinue use if the product is dropped or subjected to an impact in which the interior is exposed. The continued use of a damaged product may cause injuries or fire.
- Store this product out of reach of children. Be careful when around children not to harm them with the product or parts.
- Do not operate this product or handle the DC cord with wet hands. Do not place a container with liquid near the product. If liquid comes in contact with the product, immediately unplug the unit. The continued use of a product exposed to a liquid may cause damage or injury through fire or electric shock.
- Do not insert hands, inflammable objects, or metal objects such as paper clips or staples into this product. It may cause damage or injury through fire or electric shock. Discontinue use if an object enters the product.
- Do not use the product near inflammable gases or liquids such as gasoline, benzine, or paint thinner. Do not use inflammable products such as alcohol, benzine, or paint thinner to clean the product. The use of inflammable cleaners and solvents may cause an explosion or fire.
- When unplugging the unit, do not pull on the DC cord. Hold the AC adapter unit when removing the DC cord from an outlet.
- If the product emits a strange odor, heat, or smoke, discontinue use. Immediately unplug the product. The continued use of a damaged product or part may cause injuries or fire.
- Take the product to a Minolta Service Facility when repairs are required.

⚠CAUTION

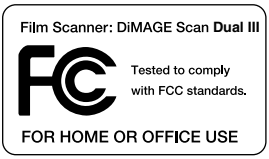
- This product should only be operated in the upright position. Inappropriate placement may result in fire.
- Damage or injury through fire or electric shock may result if the product is used or stored in the following conditions:
  In humid or dusty environments
  In direct sunlight or hot environments
  In smoky or oily areas
  In unventilated areas
  On unstable or unlevel surfaces

- Insert the plug securely into the electrical outlet.
- Do not use if the cord is damaged.
- Do not cover the AC adapter. A fire may result.
- Do not obstruct access to the AC adapter; this can hinder the unplugging of the unit in emergencies.
- Unplug the product when cleaning or when the unit is not in use for long periods.
- Periodically check that the plug is clean. Dust and dirt that may collect between the prongs of the plugs may result in fire.

Additional cautions:
- Do not move, obstruct, or touch the film holder when scanning. The product or scanned images can be damaged.
- Do not use a brush or air brush to clean the interior of the product.

As an ENERGY STAR Partner, Minolta has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

This mark certifies that this product meets the requirements of the EU (European Union) concerning interference causing equipment regulations. CE stands for Conformité Européenne.



This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Do not remove the ferrite cores from the cables.

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. Tested by the Minolta Corporation 101 Williams Drive Ramsey, New Jersey 07446 USA

The sound pressure level is less than 70dB according to ISO 3744 or ISO 7779.

Follow the steps below to set up the scanner.
1 Check the package contents (p. 10)
2 Check the system requirements (p. 10)
3 Install the utility software (p. 12)
4 Connect the USB cable (p. 18)
5 Connect the AC adapter (p. 19)
6 Turn on the scanner (p. 19)

The package contents

Check the packing list before using this product. If any items are missing, immediately contact your dealer.

1 Instruction manual
2 Warranty card
3 Scanner unit
4 35mm film holder FH-U1
5 Slide mount holder SH-U1
6 USB cable UC-2
7 DiMAGE Scan Dual III CD-ROM
8 Adobe Photoshop Elements CD-ROM
9 DiMAGE Instruction Manuals-CD-ROM
10 AC adapter
The adapter unit varies with destination:
AC-U21 for use in North America, Taiwan, and Japan.
AC-U22 for use in continental Europe, Oceania, and Asia (except Hong Kong, China, Taiwan, and Japan).
AC-U23 for use in England, Hong Kong
AC-U24 for use in China.
Contact your dealer for AC adapter models for other countries.

System Requirements

To use the scanner, the computer system must meet the following requirements:

IBM PC/AT compatible computers	Macintosh computers
Pentium 166MHz or later processor.	Power PC G3 or later processor.
Windows 98, 98 Second Edition, 2000 Professional, Me, or XP.	Mac OS 8.6 to 9.2.2 and Mac OS X v10.1.3 to v10.1.5.
A minimum of 64MB of actual RAM.	A minimum of 64MB of RAM in addition to the requirements for the Mac OS and applications.
100MB or more of free hard disk space.	
A monitor with 1024x768 pixels or greater is recommended. A monitor with 640 x 480 pixels can also be used.	
A 16-bit or greater color monitor: High Color or medium color quality (Windows XP).	A monitor with 32,000 colors or more.
The TWAIN driver software has been tested for use with Photoshop ver. 5.5, 6.0.1, 7.0, Photoshop Elements, Paint Shop Pro 7.0, and Corel PHOTO-PAINT 10.0.	The plug-in driver software has been tested for use with Photoshop ver. 5.5, 6.0.1, 7.0, and Photoshop Elements.
USB port as standard interface, Adaptec: USB2connect 3100,USB2connect 5100, DuoConnect. Belkin: Hi-speed USB 2.0 5-Port PCI Card, USB 2.0 Hi-Speed 2-Port PCI Card.	Standard USB port supplied by Apple Computer.

* The CPU and RAM must satisfy the requirements of the operating system.
* Application software must be guaranteed by the manufacturer to work with the operating system.
* The USB interface must be guaranteed by the manufacturer to work with the operating system.
* The software may freeze or an error may occur if the operating system's stand-by (sleep) function activates. Turn the function off before using the utility software.
* The RAM requirements refer to the physical memory available without the use of memory management tools or virtual memory.
* Check the Minolta web site for the latest compatibility information:

North America: http://www.minoltausa.com
Europe: http://www.minoltasupport.com

CPU, RAM, and hard-disc space requirements with 16-bit color depth, Auto Dust Brush (dust-removal function), and Pixel Polish (automatic image-correction function) are as follows:

IBM PC/AT compatible computers

Recommended requirements in parenthesis

16-bit color depth	**Auto Dust Brush or Pixel Polish**	**16-bit plus Auto Dust Brush**
Pentium 166MHz (Pentium II) or later processor.	Pentium 166MHz (Pentium III) or later processor.	
64MB (128 MB) of actual RAM. 128MB with Windows XP	128 MB (256 MB) of actual RAM.	
200MB (400 MB) of free hard-disk space.	300MB (600 MB) of free hard-disk space.	500MB (1GB) of free hard-disk space.

Macintosh computers

Recommended requirements in parenthesis

16-bit color depth	**Auto Dust Brush or Pixel Polish**	**16-bit plus Auto Dust Brush**
Power PC G3 or later processor.	Power PC G3 (PowerPC G4) or later processor.	
A minimum of 128MB (256MB) of RAM in addition to the requirements for the Mac OS and applications.		
200MB (400 MB) of free hard-disk space.	300MB (600 MB) of free hard-disk space.	500MB (1GB) of free hard-disk space.

To use the plug-in with Photoshop or Photoshop Elements on Mac OS 8.6 – 9.2.2, add the above memory requirements to Photoshop's suggested application memory allocation.

Installation

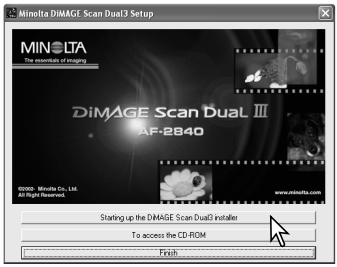
⚠ *Before installing the utility software*

RAM-stationed programs such as anti-virus or installation-monitoring software may cause the installer to fail. Remove or disable these programs before installing the scanner software. Reinstall or enable the software when the installation is complete.
Do NOT connect the scanner to a computer before installing the software; if the scanner is connected to the computer before the software is installed, the computer may not recognize the scanner unit.

Installing the utility software – Windows

In the example below, the hard disk is drive C, the CD-ROM drive is drive D, and the operating system is Windows XP. The letters designating the drives will vary between computers.
Turn on the computer to start up the Windows operating system. Users with Windows 2000 Professional or XP should log on with the administrator privilege.

Insert the DiMAGE Scan Dual III CD-ROM into the CD-ROM drive. The setup screen will open.

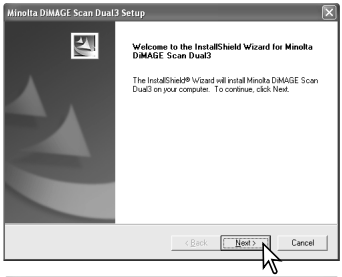


Click the “Starting up the DiMAGE Scan Dual III installer” button. The program decompression screen will briefly appear. The Install Shield Wizard will start automatically.

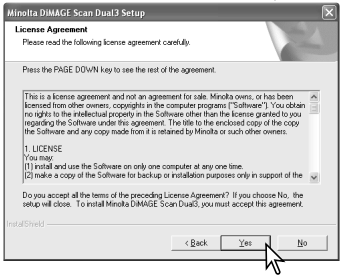
If the Install Shield Wizard does not start up automatically, execute the following procedure:

1. Initiate the run routine on the start menu.
2. Click the browse button in the run dialog box.
3. Select the CD-ROM drive from the look-in box in the browse window.
4. Open the driver folder.
5. Open the English folder.
6. Click on “Setup.exe.” It will be displayed with its location in the run dialog box: D:\Driver\English\Setup.exe. Click OK.

The opening screen of the Install Shield Wizard will appear. Click the next button to continue.

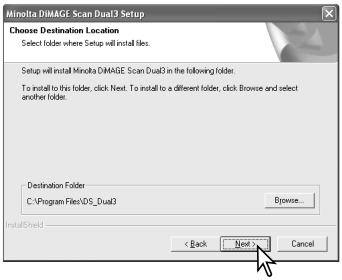

Minolta DiMAGE Scan Dual3 Setup
Welcome to the InstallShield Wizard for Minolta DiMAGE Scan Dual3
The InstallShield® Wizard will install Minolta DiMAGE Scan Dual3 on your computer. To continue, click Next.
< Back
Next >
Cancel

Click the yes button to accept the agreement and continue. Read the entire agreement carefully before continuing. If you do not agree to the terms of the license agreement, click the no button to exit the setup program.

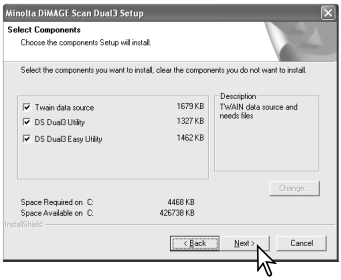

Minolta DiMAGE Scan Dual3 Setup
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install Minolta DiMAGE Scan Dual3, you must accept this agreement.
InstallShield
< Back
Yes
No

To install the software in the default folder (C:\Program Files\DS_Dual3), click the next button.

To install the software in another folder, click the browse button to display the folder selection window. Specify the directory in which to install the software, then click the next button.

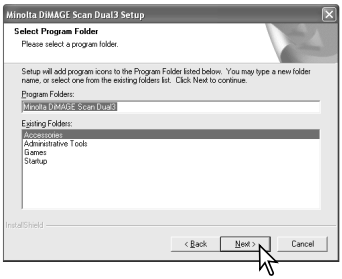

Minolta DiMAGE Scan Dual3 Setup
Choose Destination Location
Select folder where Setup will install files.
Setup will install Minolta DiMAGE Scan Dual3 in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\DS_Dual3
Browse...
InstallShield
< Back
Next >
Cancel

Select the components to be installed, then click the next button. Normally, TWAIN-data-source should be selected. The descriptions in this manual assume the utility was installed with the TWAIN-data-source.

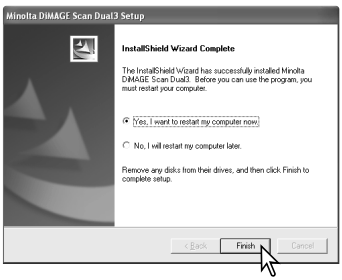

Minolta DiMAGE Scan Dual3 Setup
Select Components
Choose the components Setup will install.
Select the components you want to install, clear the components you do not want to install.
Twain data source 1679 KB
DS Dual3 Utility 1327 KB
DS Dual3 Easy Utility 1462 KB
Description
TWAIN data source and needs files
Change...
Space Required on C: 4468 KB
Space Available on C: 426738 KB
InstallShield
< Back
Next >
Cancel

The name of the default program folder is displayed. To install the software icons in this folder, click the next button.

To install the software icons to another existing folder, select one of the folders listed in the existing-folders box below. Click the next button to begin installation.


Minolta DiMAGE Scan Dual3 Setup
Select Program Folder
Please select a program folder.
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue.
Program Folders:
Minolta DiMAGE Scan Dual3
Existing Folders:
Accessories
Administrative Tools
Games
Startup
InstallShield
< Back
Next >
Cancel

The Install Shield Wizard will indicate that installation was successful. Select the restart-computer option and then click Finish. When the computer restarts, the scanner driver software will be ready to use. Before using the software, read the read-me file. See page 84 for the default location of installed files and folders.


Minolta DiMAGE Scan Dual3 Setup
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed Minolta DiMAGE Scan Dual3. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

The scanner software can be launched directly from many image-processing applications such as Photoshop Elements (p. 16). When the scanner utility software is installed in a computer with a Windows operating system, a TWAIN driver is installed with it. Although the TWAIN driver cannot be seen, it allows the utility to be launched from an application as well as allowing the computer and scanner to communicate.

Installing the utility software – Macintosh

Turn on the computer to start the Mac OS. Users with Mac OS X should log in as administrator.

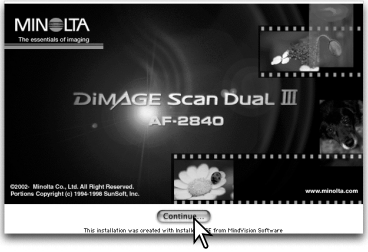
Insert the DiMAGE Scan Dual III CD-ROM into the CD-ROM drive. The DiMAGE Scan Dual III CD-ROM icon will appear on the desktop.

Double-click on the CD-ROM icon.

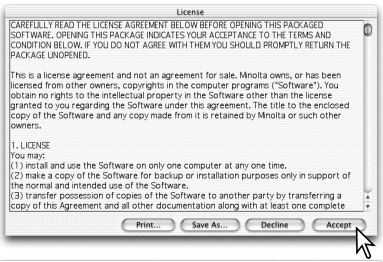
Open the driver folder to view the language folders. Open the appropriate language folder.

Double click on the DS Dual3 Installer icon; the installer's start-up screen will be displayed.

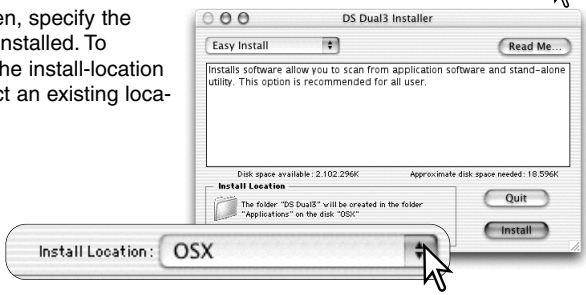
Click the continue button on the installer screen to begin the installation routine.



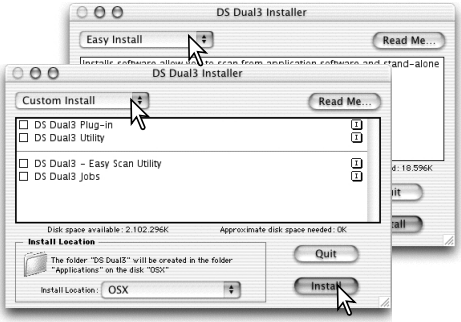
The end-user license agreement will appear. If you accept the terms of the agreement, click the accept button to continue the installation routine. If you do not agree to the conditions stated in the end-user license agreement, click the decline button and the software will not be installed.


License
CAREFULLY READ THE LICENSE AGREEMENT BELOW BEFORE OPENING THIS PACKAGED SOFTWARE. OPENING THIS PACKAGE INDICATES YOUR ACCEPTANCE TO THE TERMS AND CONDITION BELOW. IF YOU DO NOT AGREE WITH THEM YOU SHOULD PROMPTLY RETURN THE PACKAGE UNOPENED.
This is a license agreement and not an agreement for sale. Minolta owns, or has been licensed from other owners, copyrights in the computer programs ("Software"). You obtain no rights to the intellectual property in the Software other than the license granted to you regarding the Software under this agreement. The title to the enclosed copy of the Software and any copy made from it is retained by Minolta or such other owners.
1. LICENSE
You may:
(1) install and use the Software on only one computer at any one time.
(2) make a copy of the Software for backup or installation purposes only in support of the normal and intended use of the Software.
(3) transfer possession of copies of the Software to another party by transferring a copy of this Agreement and all other documentation along with at least one complete
Print...
Save As...
Decline
Accept

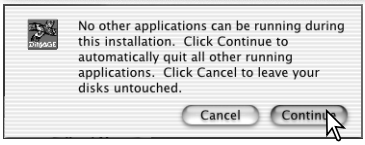
At the bottom left of the installer screen, specify the location in which the software will be installed. To change the designated location, use the install-location menu; this menu can be used to select an existing location or create a new folder.


DS Dual3 Installer
Easy Install
Read Me...
Installs software allow you to scan from application software and stand-alone utility. This option is recommended for all user.
Disk space available : 2,102,296K
Approximate disk space needed : 18,596K
Install Location
The folder "DS Dual3" will be created in the folder "Applications" on the disk "OSX"
Quit
Install
Install Location :
OSX

Select the installation method from the pop-up menu at the top left of the installer screen. The easy-install option will install the required software. If only specific programs need to be installed, select the custom-install option; click the check box of the files to be installed. Click on the install button to begin installation.



Any software that is running must be stopped before the scanner software can be installed. Click the continue button to shut down any active applications and continue the installation routine. The cancel option will end the installation routine.


No other applications can be running during this installation. Click Continue to automatically quit all other running applications. Click Cancel to leave your disks untouched.
Cancel
Continue

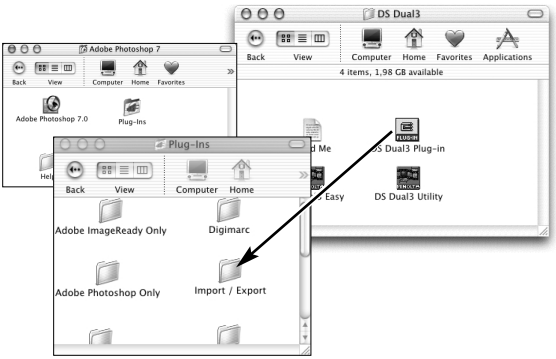
A screen confirming the successful installation of the software will appear. Click the restart button to exit the installation program and restart the computer. The quit button exits the installer without restarting the computer. To make additional installations, click the continue button.

Installation was successful. You have installed software which suggests you restart your computer. If you are finished, click Restart, or click Quit to leave the Installer. If you wish to perform additional installations, click Continue.
Continue
Quit
Restart

After the computer restarts, confirm the DS Dual3 (DiMAGE Scan Dual III) folder is installed in the designated location. If the easy-install option was chosen, the folder will contain the following items: DS Dual3 Utility, DS Dual3 Easy, DS Dual3 Plug-in, and Read Me. See page 85 for the default location of installed files and folders. Before using the software, read the read-me file.

When the utility software is installed, a plug-in file is placed in the DS Dual3 folder. By simply dragging and dropping the plug-in file into an application's import folder, the scanner utility software can be launched from that application.

The Mac OS X plug-in cannot be used with applications that are not OS X native such as Photoshop Elements (p. 16). The plug-in can be used with Photoshop ver. 7.0.



Installing Adobe Photoshop Elements

The scanner utility software contains a plug-in module that can be installed in the Photoshop Elements import/export folder located in the plug-in folder. This will allow the scanner utility software to be opened from Photoshop Elements.

PC / AT compatible computers	Macintosh computers
Pentium processor	PowerPC processor.
Windows 98, 98 Second Edition, Me, 2000, NT 4.0, or XP.	Mac OS 8.6, 9.0, 9.0.4, or 9.1 (Adobe Photoshop Elements is not native to Mac OS X).
64 MB of RAM.	64 MB of RAM (with virtual memory on).
150 MB of available hard disk space	
Color monitor with 256-color (8 bit) or greater video card and 800 X 600 or greater monitor resolution.	
Service Pack 4 or later and Internet Explorer 4.0 or later are required with Windows NT 4.0.	--

Files saved with a 16-bit or 16-bit linear color depth cannot be opened in Adobe Photoshop Elements. Read the setting scanner preferences section on page 45.

Take time to register your copy of Photoshop Elements with Adobe. Read the instructions in the registration folder located in the technical-information folder on the Adobe Photoshop Elements CD-ROM.

Windows

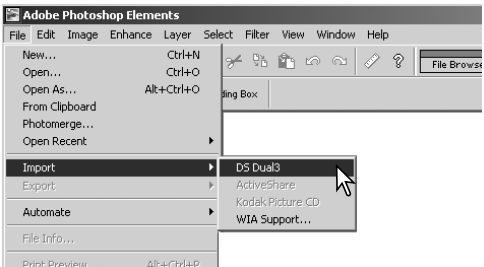
Insert the Adobe Photoshop Elements CD-ROM into the CD-ROM drive. Adobe Photoshop Elements AutoPlay screen will appear. Follow the instructions on the screen to install the software. After accepting the end-user license agreement, click the explore button on the next screen to open the read-me file for special installation instructions before continuing.

Macintosh

Insert the Adobe Photoshop Elements CD-ROM into the CD-ROM drive. Double-click the CD-ROM icon on the desktop. Open the appropriate language folder, then the Adobe Photoshop Elements folder. Double-click the Install Photoshop Elements icon. Follow the instructions on the screen to continue installation.

Launching the scanner utility from Photoshop Elements

Launch Adobe Photoshop Elements. Select DS Dual3 (Windows) or DS Dual3 Plug-in (Macintosh) from the import command on the file menu.



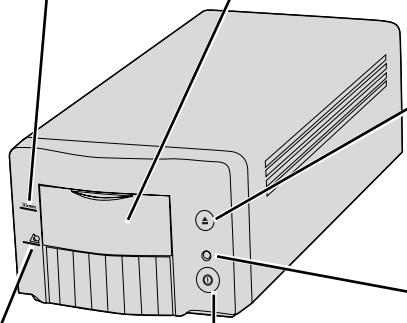
Names of parts

35 mm film-holder mark (p. 22)

Pull the front door down to this position when inserting a 35mm film holder FH-U1 or slide mount holder SH-U1.

Front door (p. 22)

When the scanner is not in use, close the door to prevent dust from entering the unit.



Eject button (p. 23)

This button ejects the film holder, and rewinds the film in the optional APS adapter.

Indicator lamp

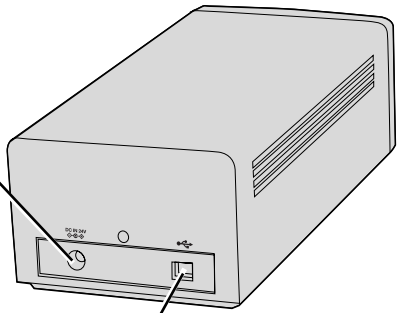
Glows steadily:
The scanner is ready to use.
Blinks slowly:
Scanning or initializing. When the scanner is initializing, do not open the front door (p. 19)
Blinks rapidly:
Scanner error. (p. 86)

APS adapter mark (p. 23)

Pull the front door down to this position when inserting the optional APS adapter.

Power switch (p. 19)

Turn off the scanner when it is not in use.



DC terminal

USB port

⚠ Before scanner setup

Before connecting the DiMAGE Scan Dual III to a computer, the scanner utility software must first be installed; if the scanner is connected to the computer before the CD-ROM is installed, the computer may not recognize the scanner unit. Read page 12 for the installation procedure.

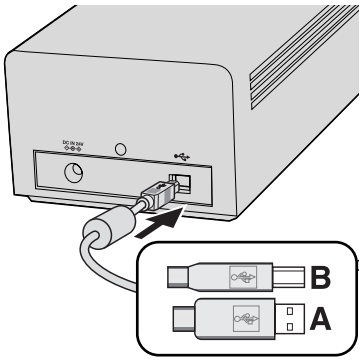
The scanner should be placed on a level surface free from vibrations. It should be located away from direct sunlight and in a clean, dry, well-ventilated area.
The easiest and safest way to connect the scanner is to turn off the computer and all peripheral devices before attaching the cable. When connecting the scanner with the computer and peripheral devices on, follow the cautions below:

- Never connect or disconnect the cable while the computer, the scanner, or other devices are operating or transferring data.
- Do not connect or disconnect the cable while the computer is starting up or shutting down; the computer or scanner may not operate properly.
- An interval of at least five seconds is required between disconnecting and connecting the scanner.

Connecting the USB cable

The following instructions are based on the procedures to connect the scanner with the computer and all peripheral devices off.

Securely plug the B connector of the USB cable into the scanner's USB port and the A connector into the computer's USB port.



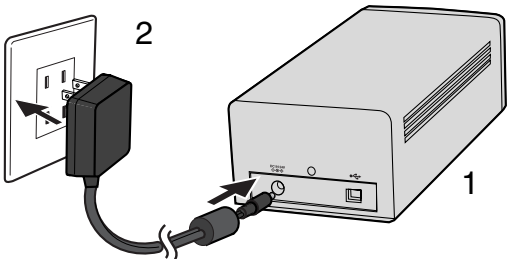
The scanner should be connected directly to the computer. Attaching the scanner to a USB hub may prevent proper operation.

When the scanner is initially connected to a computer with a Windows 98, 98SE (Second Edition), or 2000 Professional operating system, the found-new-hardware wizard will appear briefly. No action is required. With Windows 2000, the "Digital Signature Not Found…" message may appear. Click the yes button to complete the scanner installation.

When the scanner is initially connected to a computer with a Windows XP operating system, the found-new-hardware wizard will appear. Click the next button. The "not passed Windows Logo testing" message appears. Click the continue-anyway button to complete the scanner installation.

Connecting the AC adapter

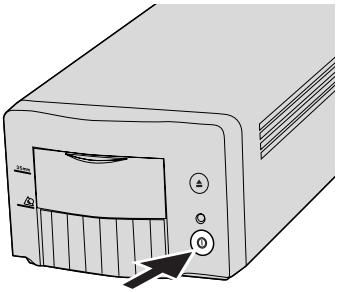
Connect the output plug of the AC adapter to the scanner's DC terminal (1). Plug the adapter unit into a standard household outlet (2).



Turning on the scanner

Check the scanner is securely connected to the computer. With the front door closed, turn on the scanner with the power switch. Start up the computer.

When launching the utility software, the front door must be closed during initialization; the indicator lamp will blink when the scanner is initializing. Once the indicator lamp glows steadily, the scanner can be used.



Turning off the scanner

Close the utility software and press the main switch on the front of the scanner unit. Unplug the scanner when cleaning or when the product is not in use for extended periods.

Disconnecting the scanner

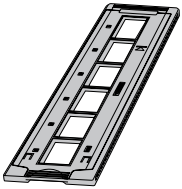
The easiest and safest way to disconnect the scanner from the computer is to turn off both devices as well as any peripheral devices and remove the cable. When connecting the scanner with these devices on, quit the utility software first, then disconnect the cable.

Never disconnect the scanner when the indicator lamp is blinking.

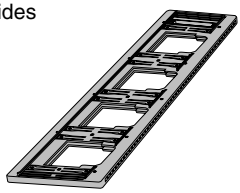
Film formats

With the DiMAGE Scan Dual III, two film formats can be scanned: 35 mm and APS. Two supplied film holders and one optional holder are available.

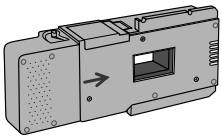
FH-U1
For 35mm film strips



SH-U1
For mounted 35mm and APS slides



AD-10 (sold separately)
For APS film cassettes



Loading the film

Handling film

To achieve the best possible reproduction from the scanner, the film and film holder should be free from dust and dirt. Always work with processed film in a clean, dust-free environment. Handle film by the edges or mount to prevent fingerprints and dirt marring the image area. Special lint free gloves are available from photographic equipment retailers for film handling as well as anti-static cloths, brushes, and blowers for removing dust. Film cleaner can be used to remove oil, grease, or dirt from film; carefully follow the manufacturer's instructions and precautions for the film cleaning solvent.

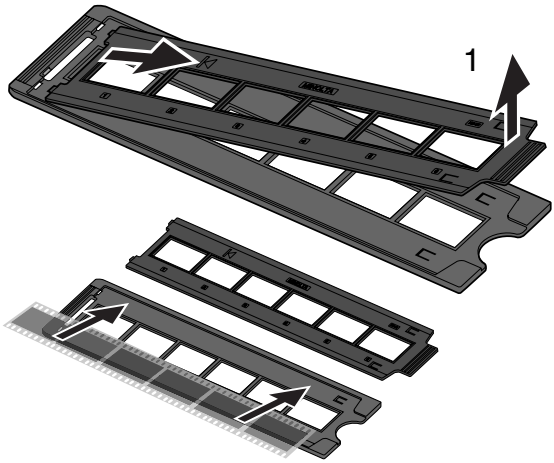
Where is the emulsion?

When film is scanned, the emulsion side of the film should be down. When viewing the film image, if the image is orientated correctly rather than a mirror image, the emulsion side is facing down. If the image is abstract or symmetrical so its orientation is difficult to determine, the emulsion is down if the frame numbers and edge markings can be read correctly. With mounted slides, the emulsion is on the same side of the mount as the film manufacturer's or processor's name is printed.

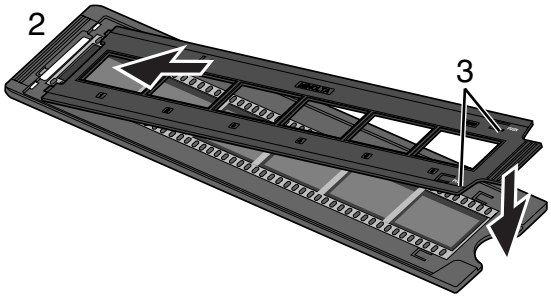
Loading 35mm film strips

Film strips of up to six frames can be loaded into the FH-U1 film holder. To remove the cover, lift the tab at the end of the film holder (1).

With the emulsion down, place the film on the base of the holder. Align the film with the frame apertures.



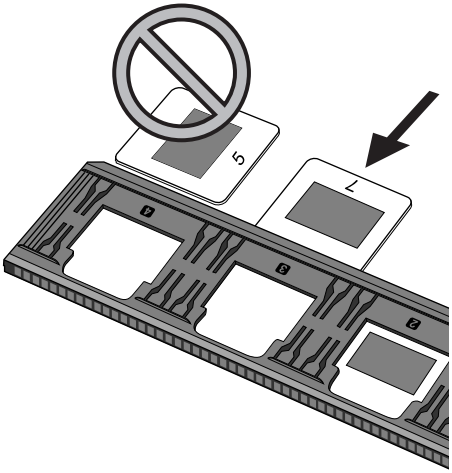
Replace the cover. Slide the two protrusions on the left side of the cover into the two slots in the base (2). Carefully lower the cover taking care not to move the film. Snap the cover closed by pressing the two push marks on each side of the tab (3).



Loading mounted slides

Up to four mounted 35mm or APS slides can be inserted into the slide mount holder. The slide mounts must be between 1 mm and 2 mm thick to fit the holder. Glass mounts cannot be used; the glass refracts the light resulting in distorted and unevenly illuminated scans.

Hold the slide mount holder so that the slots are to the top and the frame numbers are upside-down and face up. Insert the slides into the holder emulsion side down. The slide must be parallel with the length of the holder otherwise the top and bottom of the image area will be cropped.

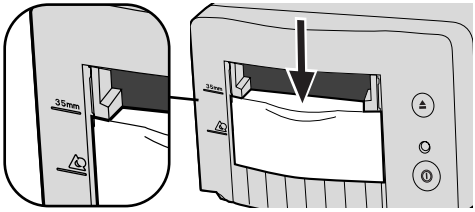


Loading a film holder into the scanner

Using the FH-U1 and SH-U1 film holders

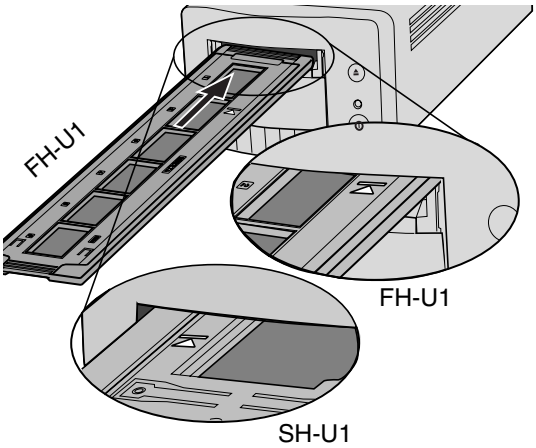
Before using the scanner, install the scanner utility software (p. 12). With the front door closed, turn on the scanner and then start the computer. Launch the software before inserting the film holder (p. 24, 31). Do not insert the film holder into the scanner while the utility software is launching or the scanner is initializing; the indicator lamp blinks slowly during this period.

When the indicator lamp glows steadily, open the front door until the top of the door is aligned with the 35mm film-holder mark.



Insert the film holder into the scanner in the direction indicated by the arrow. Hold the holder straight and level when inserting it into the scanner.

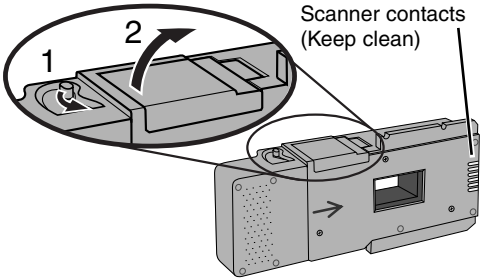
Carefully push the holder into the scanner until the arrow mark is aligned with the scanner door; the holder will be automatically fed into the scanner from that point. Never touch or hinder the holder when it is in the scanner.



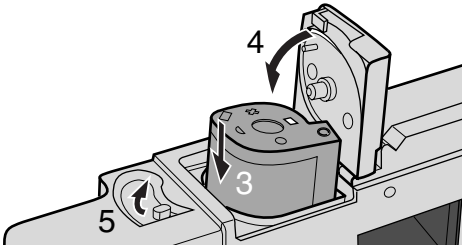
Using the APS Adapter AD-10 (sold separately)

APS (Advanced Photo System) cassette film can be scanned using the APS Adapter AD-10. The cassette must contain processed film; the square number 4 mark at the end of the cassette should be highlighted in white. Do not load unprocessed film.

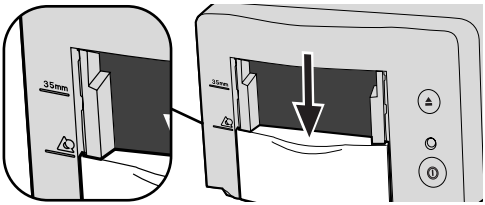
To load an APS cassette, slide the film-chamber release (1) toward the top of the adapter unit until the chamber door opens (2). The film-chamber release will not return to its original position until the door is closed.



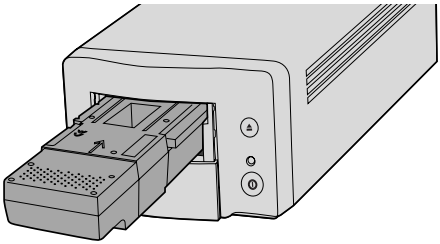
Insert the cassette into the film chamber as shown (3). Close the chamber door (4); the film-chamber release will return to its original position (5).



When the indicator lamp glows steadily, open the front door until the top of the door is aligned with the APS adapter mark.



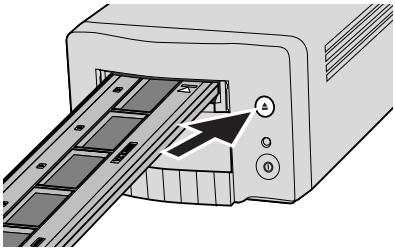
With the scanner contacts face up, insert the adapter into the scanner until it stops. The scanner detects the holder and automatically loads the film. Do not remove the holder until the film has been rewound, see the ejecting a film holder section below.



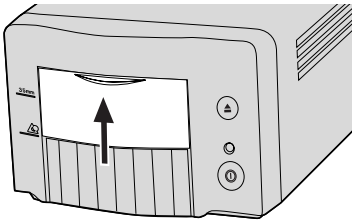
Do not remove the APS film from the cassette.
When using the APS adapter, if the scanner makes a strange sound or the film-advance warning appears, press the eject button to remove the adapter. Follow the instructions in the troubleshooting section (p.86).

Ejecting a film holder

Use the eject button on the scanner body or in the DiMAGE Scan Dual III Utility window to remove the holder; the scanner automatically ejects the holder to its initial insertion position. Do not touch or hinder the holder while it is moving.



When using the optional APS Adapter, the scanner automatically rewinds the film when the eject button is pressed. Do not remove the adapter until the rewind motor has stopped.



Close the front door when the scanner is not in use.

Easy Scan Utility is a simple, automatic scanning application for trouble-free scans. The utility works as a stand-alone program, and cannot be launched through another application.

Simply follow the steps below to create trouble-free scans:
1 Turn on the scanner (p. 19)
2 Launch the Easy Scan Utility (p. 24)
3 Load the film holders (p. 20)

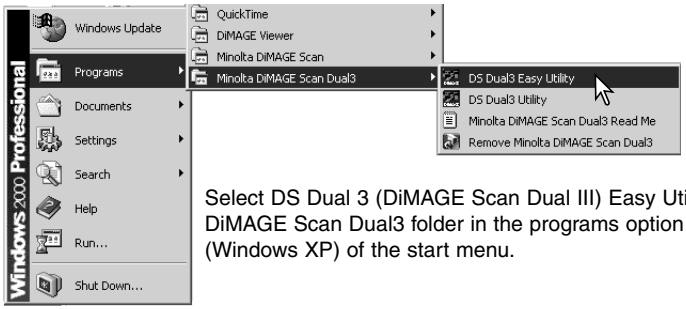
Follow the instructions in the Easy Scan window. The Easy Scan Utility wizard will take you through scanning procedure.

The following settings are automatically made when using the Easy Scan Utility:
- Autofocusing with each frame when using the FH-U1 and SH-U1 film holders.
- Autofocusing with the first frame when using the optional APS adapter.
- Index scan priority: speed setting (p. 45).
- Color depth: 8 bit.
- No multi-sample scanning.
- Automatic cropping to inside edge (p. 37).
- Color matching is on with the output color space set to sRGB (p. 60)
- Auto exposure with all film except black and white slides.

Launching the Easy Scan Utility

Turn on the scanner and close the front door before launching the Easy Scan Utility. When launching the utility, the scanner front door must be closed and the film holder removed. Do not launch the Easy Scan Utility if the DiMAGE Scan Dual III Utility has already been opened through an image-processing application.

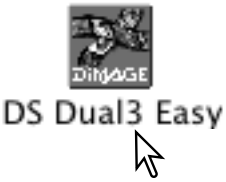
Windows



Select DS Dual 3 (DiMAGE Scan Dual III) Easy Utility from the Minolta DiMAGE Scan Dual3 folder in the programs option or all programs option (Windows XP) of the start menu.

Macintosh

Open the DS Dual3 (DiMAGE Scan Dual III) folder, and double click the DS Dual3 Easy icon.

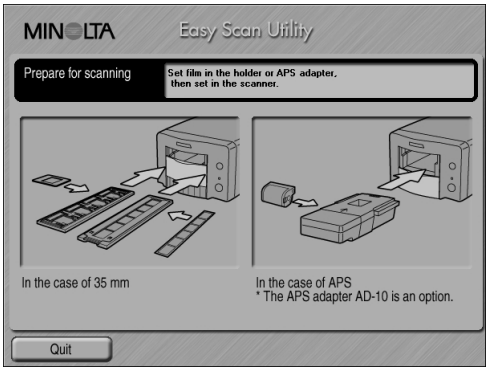


Using the Easy Scan Utility

When the Easy Scan Utility is launched, the easy scan wizard appears. Simply follow the instructions on the scan wizard to scan images.

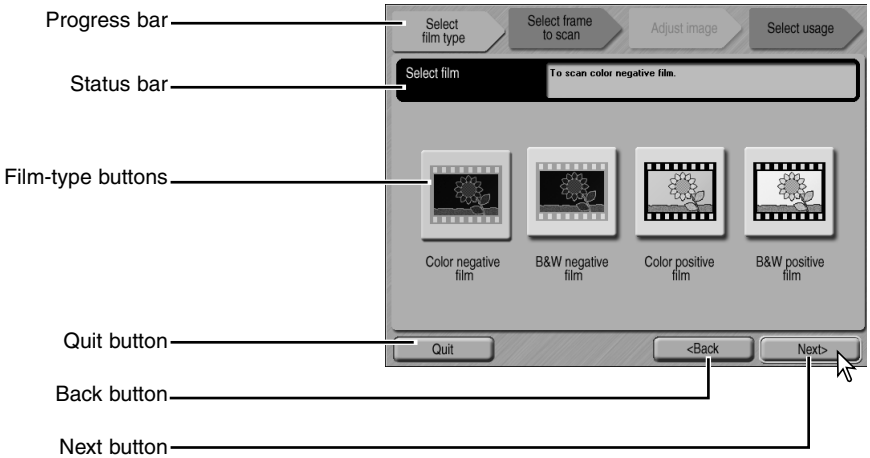
A screen requesting to insert the film holder appears. Load the holder following the instructions from page 20 to 23. When the holder is loaded, the scanner automatically detects the holder type.

If the optional APS film cassette is used, an index scan will be made; the APS auto-detect function automatically sets the film type between color and black and white, and positive and negative.


MINOLTA
Easy Scan Utility
Prepare for scanning
Set film in the holder or APS adapter, then set in the scanner.
In the case of 35 mm
In the case of APS
* The APS adapter AD-10 is an option.
Quit

To exit the Easy Scan Utility, click the quit button. The film holder will be ejected or the APS cassette in the optional adapter will be rewound automatically.

When scanning with 35mm film strips or mounted slides, the film type must be specified on this screen. Color negative, B&W negative, color positive, B&W positive film can be scanned. Film for slides is a positive film. Film for prints is a negative film. Click the appropriate film-type button. The border of the film-type button is highlighted to indicate the selection. Click the next button to set the film type and begin the index scan.



Film-type buttons: selects the film type.

Progress bar: indicates the current stage of the wizard operation.

Status bar: describes the button or function on which the mouse pointer is located

Quit button: quits the Easy Scan Utility.
The film holder will be ejected or the APS cassette in the optional adapter will be rewound automatically.

Back button: returns to the previous operation.
When returning to the screen to set the film holder, The film holder will be ejected or the APS cassette in the optional adapter will be rewound automatically.

Next button: proceeds to the next operation.

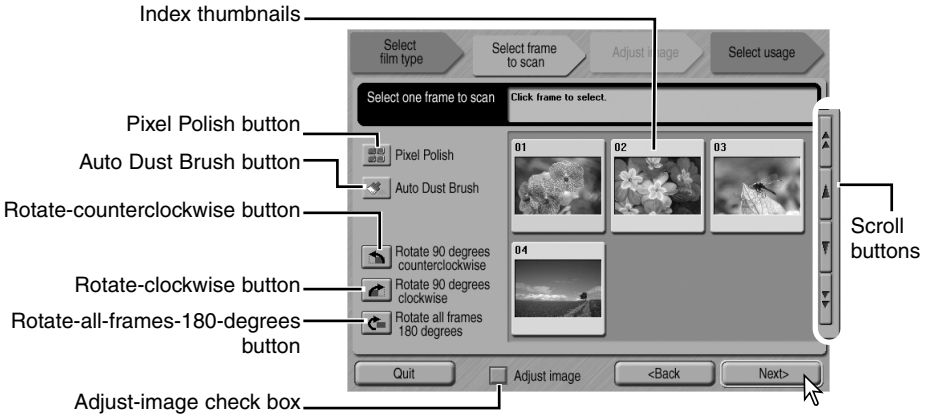
Canceling an index scan, prescan, or final scan (Macintosh)

To cancel a scan once it has started, click and hold the mouse on the cancel button in the progress dialog box or press and hold the command and period (.) keys until the cancel button appears to depress.

When the index scan is complete, thumbnails of all the images in the holder are displayed. The image to be scanned can be selected on this screen.

Click the frame of the image to be scanned. The border is highlighted to indicate selection. Only one image can be selected.

Make the desired settings for the selected image. Click the next button.



Index thumbnails: used to select the image to be scanned.
When using the optional APS cassette, the thumbnail frame numbers correspond to the film frame numbers.

Pixel Polish button: Click this button to correct images automatically. Pixel Polish cannot be used with black-and-white film. To cancel Pixel Polish, click the button again. Once selected, Pixel Polish will remain in effect until canceled.

Auto Dust Brush button: To reduce the effect of dust, click this button. The Auto Dust Brush is most effective with fine dust particles that cannot be removed with a brush or blower. Before using the Auto Dust Brush, remove all visible dust from the film. The effect can only be seen in the scanned image. The effect varies with the image. To cancel the Auto Dust Brush, click the button again. Once selected, the Auto Dust Brush will remain in effect until canceled.

Rotate-counterclockwise button: rotates the selected thumbnail 90˚ counterclockwise.

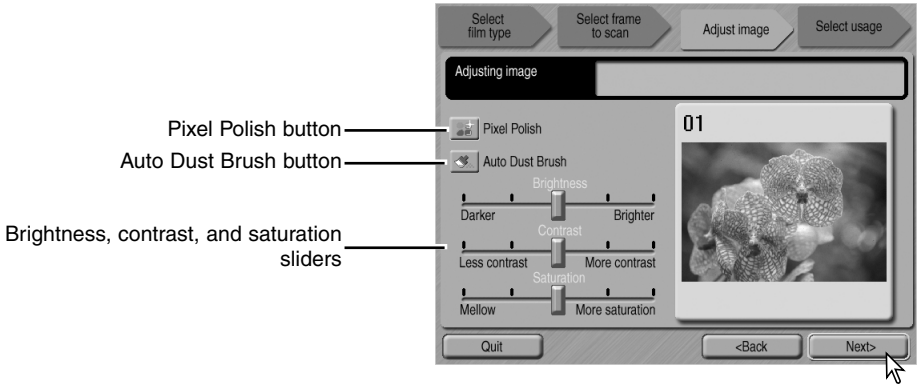
Rotate-clockwise button: rotates the selected thumbnail 90˚ clockwise.

Rotate-all-frames-180-degrees button: rotates all the thumbnails 180˚.

Adjust-image check box: check the box to access the adjust-image screen to control the brightness, contrast, and saturation of the selected image. Uncheck the box to go directly to the select-usage screen.

Scroll buttons: scrolls through the thumbnails when using the optional APS adapter. Clicking the single-arrow button scrolls one line. Clicking the double-arrow button scrolls two lines.

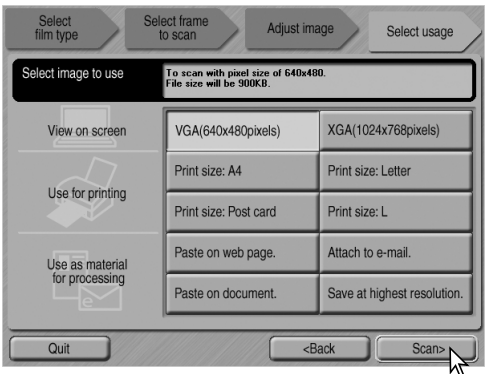
If the adjust-image option was selected by checking the box in the previous screen, the adjust-image screen will be displayed. After making adjustments to the image, click the next button.



Pixel Polish button: Click this button to correct images automatically. Changes will be reflected in the displayed image. If the function was selected in the previous screen, the button is highlighted. Pixel Polish cannot be used with black-and-white film.

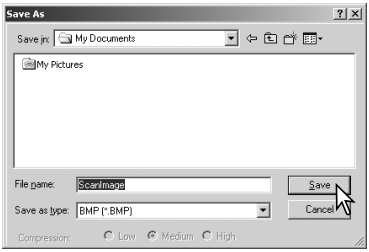
Auto Dust Brush button: Click this button to reduce the effect of dust on the surface of the film. If the function was already selected in the previous operation, the button is highlighted. The effect can only be seen in the scanned image. For more about the Auto Dust Brush, see the previous page.

Brightness, contrast, and saturation sliders: Drag the sliders to adjust brightness, contrast, or saturation. Dragging each slider to the right increases the brightness, contrast, or saturation. Dragging the sliders to the left decreases them. Changes will be reflected in the displayed image. Saturation cannot be changed with black-and-white film. Once changes are made to brightness, contrast, and saturation, the settings will remain in effect until reset or the utility is closed. Clicking the center of the slider scale resets the levers; returning to the previous screen and unchecking the adjust-image box will not reset these settings.



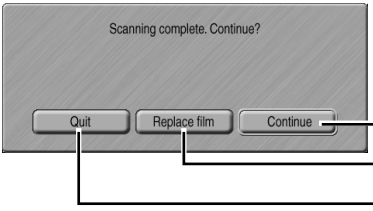
Select the option which best describes the final use of the scanned image. Only one choice can be made. Click the scan button to continue; the save-as screen will open. If an image has multiple uses, repeat the Easy Scan procedure for each use of the image.

On the save-as screen, specify the file name, file format, and destination of the image data. Click Save to start scanning.



Images can be saved in BMP, JPEG, TIFF, or PICT file formats. See the below for more about these formats. When saving JPEG files, the compression ratio can be specified. Click the save button to complete the final scan.

When using a USB storage device on the same bus as the scanner, save the data on the computer's hard disk first before transferring it to the storage device. Saving the scanned data directly to the device may corrupt the image data.



After the scanning is completed, the image is ready to be used. Click the appropriate button to continue scanning or to close the utility.

Quit button: quits the Easy Scan Utility. The film holder will be ejected or the APS cassette in the optional adapter will be rewound automatically. Turn off the scanner when not in use (p. 19).

Replace-film button: To change the film and continue scanning, click this button.The film holder will be ejected or the APS cassette in the optional adapter will be rewound automatically.

Continue button: To scan other images in the film holder, click this button.

File types

BMP	the bitmap image file type is used in Windows. This file type can be opened in the paint software installed in the Windows operating system. The file size is fixed allowing the retention of the original image quality.
JPEG	the image file can be compressed to reduce the file size. The compression ratio can be selected when saving. The higher the compression ratio, the the smaller the file size, and the more deterioration to the image quality.
TIFF	this high-resolution bitmap can be opened on any computer platform. The color depth of this format can be selected in the preference dialog box (p. 45).
PICT	this image file type is used in Macintosh. This file can be opened in the Simple Text application installed with the Macintosh operating system.

DiMAGE SCAN DUAL III UTILITY

The DiMAGE Scan Dual III Utility provides a variety of tools to optimize the reproduction of a film image. This section covers basic scanning, advanced scanning, and image processing. Read the basic scanning section entirely before moving on to the other sections.

Basic scanning (p. 31 – 43)

Launch the DiMAGE Scan Dual III Utility (p. 31)

Select the film format and type(p. 31)

Index scan

- Select index thumbnails (p. 33)
- Flip and rotate images (p. 34)
- Fit-to-window button (p. 35)

Prescan

- Grab tool (p. 37)
- Magnifying tool (p. 37)
- Cropping (p. 37-38)
- Flip and rotate images (p. 34)
- Fit-to-window button (p. 35)

Auto Dust Brush (p. 39)

Pixel Polish (p. 40)

Make the final scan using a Job, preset scan settings (p. 42)

Quit the DiMAGE Scan Dual III Utility (p. 43)

Advanced scanning (p. 44 – 63)

Setting scanner preferences (p. 44)

More index scan functions

- Reverse frame order (p. 48)
- Saving the index thumbnails (p. 49)
- Saving an index file (p. 49)
- Loading an index file (p. 49)

More prescan functions

- AE area selection (p. 50)
- AE lock (p. 50)
- Point AF (p. 52)
- Manual focus (p. 52)

Exposure-control tab (p. 46)

Inputting scan settings manually (p. 54)
Saving scan settings as a Job (p. 57)
Deleting a Job (p. 57)

Custom Wizard (p. 58)
Color matching (p. 60)

Image processing (p. 64 – 81)

Variation palette (p. 69), Brightness, contrast, color balance palette (p. 70), Tone curve and histogram palette (p. 71), Selective color palette (p. 79), Unsharp mask (p. 80), Hue, saturation, and lightness palette (p. 81)

Scanning basics

Three types of scans can be made singularly or in combination depending on the workflow and degree of processing:

Index scan: to display thumbnails of each image in the 35mm or APS film holder. An index scan is useful when scanning multiple frames on one film strip or for selecting a specific frame among similar images.

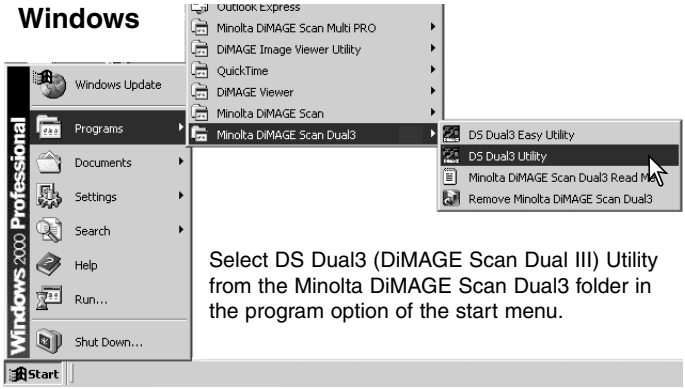
Prescan: to display a preview of a specific image. A prescan allows an image to be cropped or corrected using the utility software's image-processing tools.

Scan: to save and export an image. Image size, resolution, and file format are specified with this scan.

Launching the DiMAGE Scan Dual III Utility

Turn on the scanner before launching the DiMAGE Scan Dual III Utility. When launching the utility, the scanner front door must be closed and the film holder removed. Do not launch the utility through image-processing software if it has already been opened as a stand-alone application.

Windows



Select DS Dual3 (DiMAGE Scan Dual III) Utility from the Minolta DiMAGE Scan Dual3 folder in the program option of the start menu.

Macintosh

Open the DS Dual3 (DiMAGE Scan Dual III) folder, and double click the DS Dual3 Utility icon.

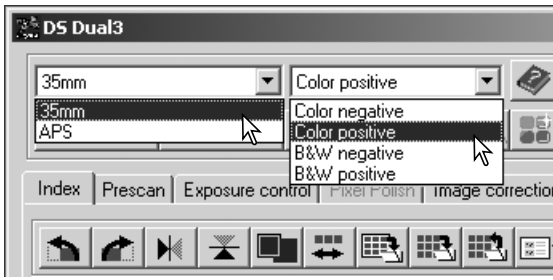
Launching the utility from an image-processing application

Most image-processing software allows applications to be opened using an import command found on the file menu or on a special import menu. Refer to the application's manual for specific instructions. An example using Photoshop Elements is on page 16.
With Mac OS X when launching the utility from Photoshop ver. 7.0, the utility window may be hidden under the Photoshop pallets. Hide the pallets before launching the utility.

Selecting the film format and type

To load a film holder, see pages 20 to 23. Before scanning, the film format and type must be specified in the main window of the utility software. Film format and type are selected from the drop-down menus in the top left corner of the main window. If the holder and selected film format do not match, a warning will be displayed and the scan will not be made.

Two film formats can be selected with this scanner: 35 mm and APS. The APS option is for use with cassette film with the optional APS adapter AD-10. If scanning APS film in slide mounts, use the 35 mm film-format option.

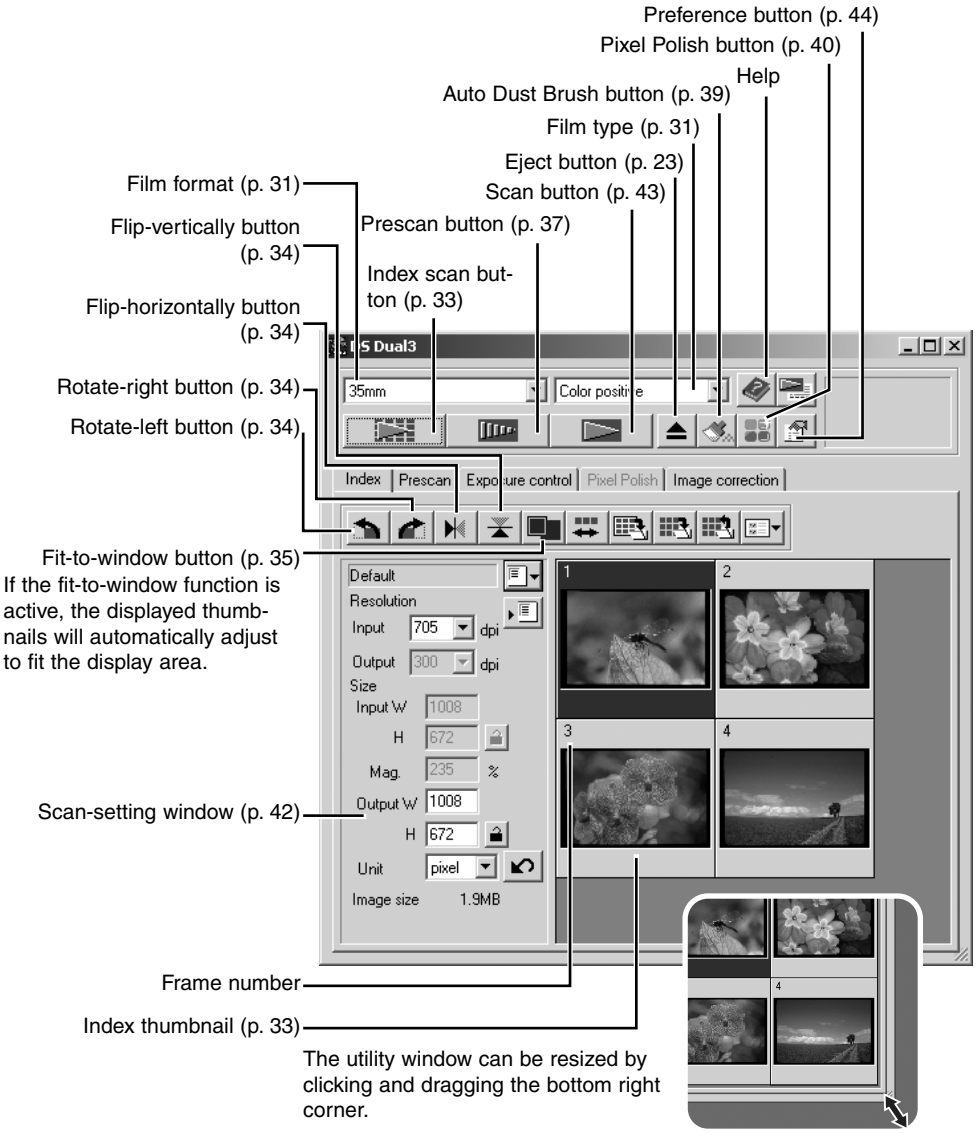


Film type can be selected between color and black and white, positive and negative film. Film for prints is negative film. Slide film is positive film. APS has an additional option: auto-detect. Auto detect automatically sets the film type between color and black and white, and positive and negative.

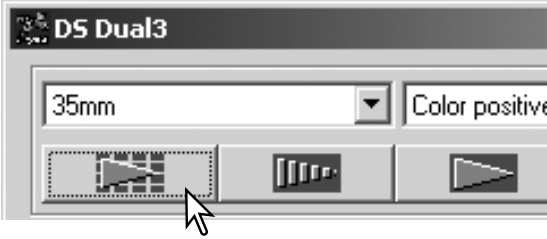
Index scan

The index scan is a low-resolution scan used to show thumbnail images of all the frames in the film holder. Index scans are particularly useful when selecting images from negative films. Images can be prescanned or scanned without making an index scan.

Main window and index scan tab



Making an index scan



With a loaded film holder in the scanner, click the index-scan button in the main window to start the scan. The frame number of the index scan corresponds to the frame number in the film holder.

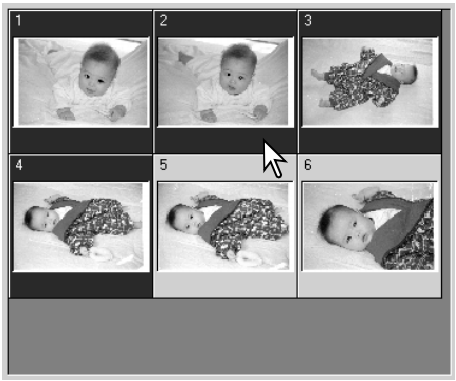
To cancel the index scan, click the cancel button in the small dialog box that appears during the scan, or press the escape key (Windows), or press the command key and period (.) at the same time (Macintosh).

Index thumbnails will remain in the display until another index scan is made or the film format and type are changed. To initialize the index display and remove the current thumbnails press the control key (Windows) or command key (Macintosh) together with the shift and R keys.

Canceling the index scan

Windows: click the cancel button in the progress dialog box or press the escape key.
Macintosh: click and hold the mouse on the cancel button in the progress dialog box or press and hold the command and period (.) keys until the cancel button appears to depress.

Selecting index thumbnails



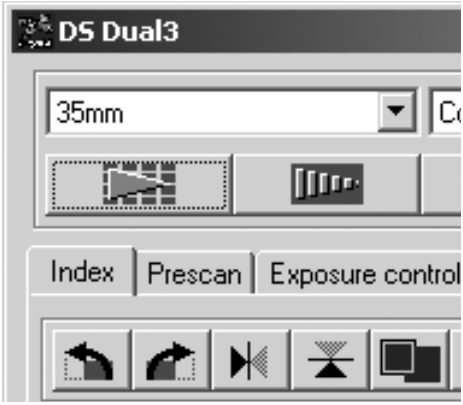
The thumbnail display allows the selection of single or multiple images for prescanning or scanning. Selected images can also be affected by the scanner software functions such as the rotate buttons.

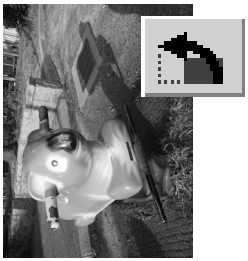
Simply click on a thumbnail to select it; the border will darken to indicate selection.

To select multiple images, press and hold the control key (Windows) or command key (Macintosh) and then click on each image to be scanned; the selected frames will have a dark border.
To select consecutive images, press and hold the shift key and then click on the first and last image of the series.
To select all frames, press the control key (Windows) or command key (Macintosh) and A key at the same time.
To deselect an image, click on the thumbnail a second time while holding the control key (Windows) or command key (Macintosh).

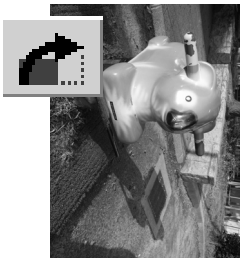
Flip and rotate images

The orientation of the index thumbnails and prescan images can be changed with the flip and rotate buttons on the tool bar.





Rotate – the rotate-right button rotates the thumbnail 90° clockwise and the rotate-left button rotates the image 90° counterclockwise each time the buttons are clicked.

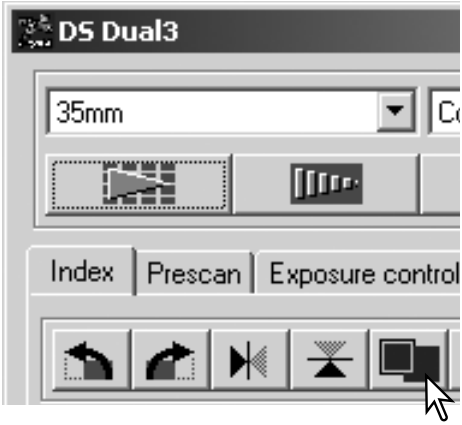


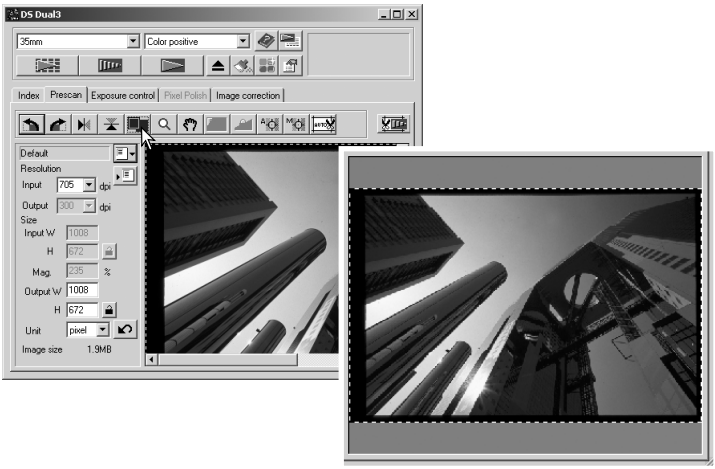
Original image

Flip – when an image is flipped, it will create a mirror image.

Fit-to-window button

Normally, index thumbnails and prescan images are displayed based on their size and resolution. When the number of thumbnails or the size of the prescan is too large or small for the display area, clicking the fit-to-window button will automatically resize the images to fit the display area. Clicking the button again displays the images at their original size. The prescan grab and zoom tools cannot be used with the fit-to-window function.

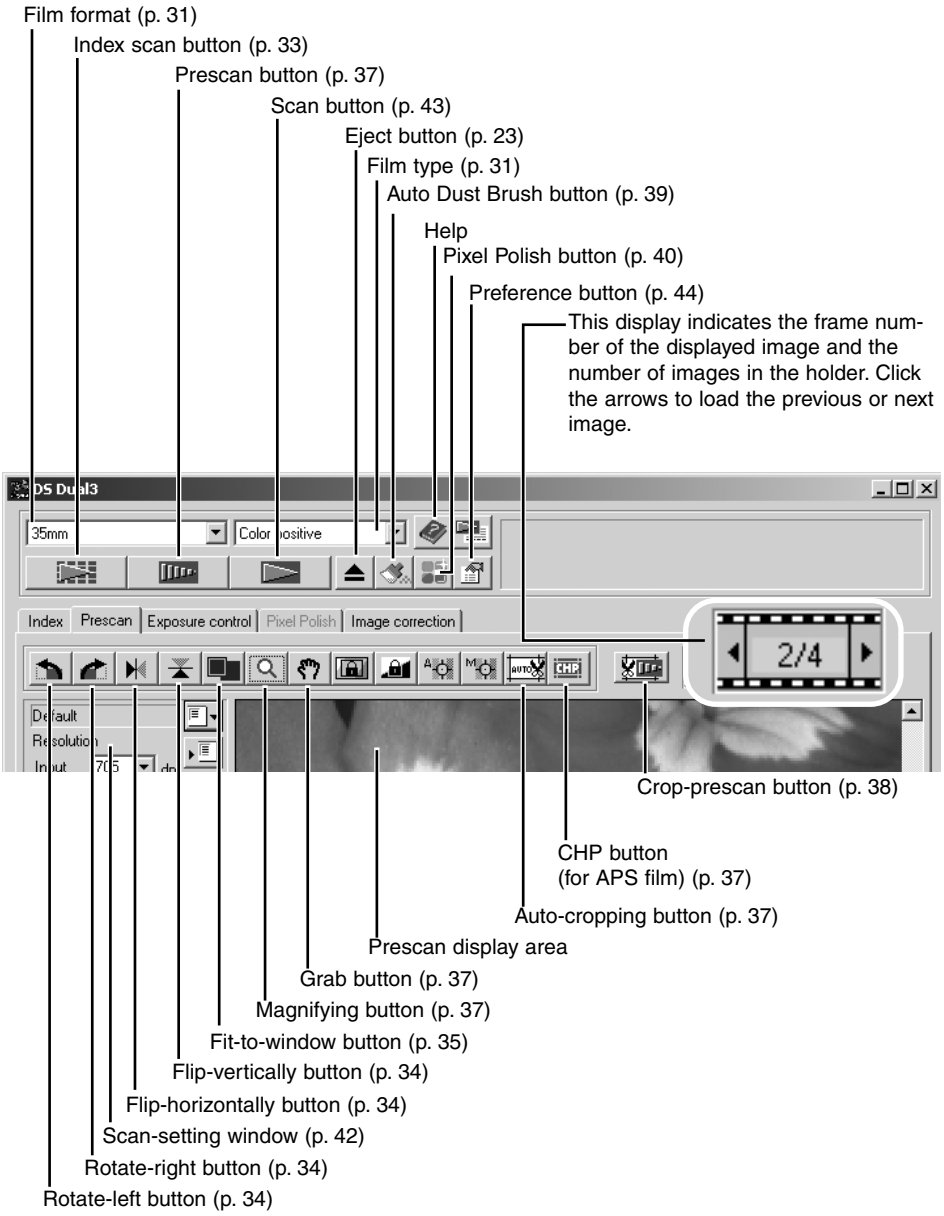




Prescan

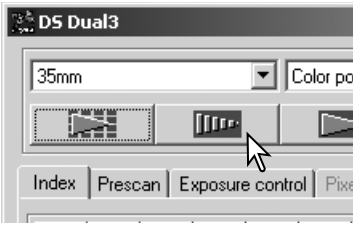
Prescan tab allows image orientation, cropping, focus, and exposure to be optimized before the final scan. Images can be scanned without making a prescan.

Main window and prescan tab


Film format (p. 31)
Index scan button (p. 33)
Prescan button (p. 37)
Scan button (p. 43)
Eject button (p. 23)
Film type (p. 31)
Auto Dust Brush button (p. 39)
Help
Pixel Polish button (p. 40)
Preference button (p. 44)
This display indicates the frame number of the displayed image and the number of images in the holder. Click the arrows to load the previous or next image.
35mm
Index
Prescan
Exposure control
Pixel Polish
Image correction
2/4
Crop-prescan button (p. 38)
CHP button (for APS film) (p. 37)
Auto-cropping button (p. 37)
Prescan display area
Grab button (p. 37)
Magnifying button (p. 37)
Fit-to-window button (p. 35)
Flip-vertically button (p. 34)
Flip-horizontally button (p. 34)
Scan-setting window (p. 42)
Rotate-right button (p. 34)
Rotate-left button (p. 34)

Making a prescan

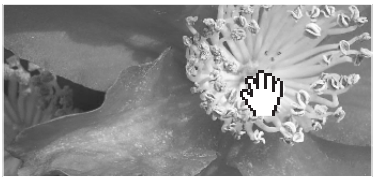
When using an index scan, select the index frame(s) to be prescanned. Click the prescan button in the main window. Double clicking on the index frame will also activate the prescan even if no thumbnail is displayed in the frame. The prescan window will be displayed automatically.
The procedure to cancel the prescan is the same as the index scan, see the canceling the index scan section on page (p.33).



After changing between the 35mm film holder and slide-mount holder, the first index thumbnail may be prescanned even if another thumbnail is selected. Reselect the thumbnail, and make the prescan again.

Grab tool

When an image is larger than the display area, the grab tool can be used to scroll the image. Click the grab button on the tool bar. Click and drag on the image to scroll. This tool cannot be used with the fit-to-window function (p. 35).



Magnifying tool

The display image can be enlarged or reduced. Click the magnifying button on the tool bar. Click on the image to enlarge. To reduce, hold down the control (Windows) or option key (Macintosh) and click on the image. When the image has reached the magnification limit, the plus or minus sign in the magnifying icon will disappear. This tool cannot be used with the fit-to-window function (p. 35).

Enlarge

Reduce

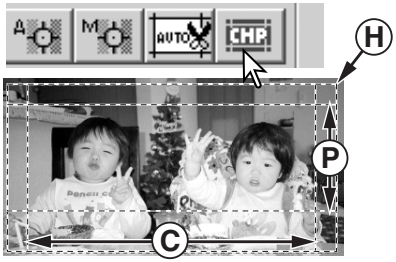
Auto cropping

Auto cropping eliminates the blank space around the image area. Pressing the auto-cropping button cycles through its three positions: crop to outside edge, crop to inside edge, and entire window. The cropping frame is indicated by a marquee (dotted line). The cropping area can also be adjusted manually (p. 38).

Clicking the auto-cropping button once will bring the cropping frame to the outside edge of the image area. Clicking the auto-cropping button a second time will bring the cropping frame to the inside edge of the image area. Clicking the auto-cropping button a third time will return the cropping frame to its original position. When using the image-correction tools, only the cropped area is displayed.

CHP button (APS film)

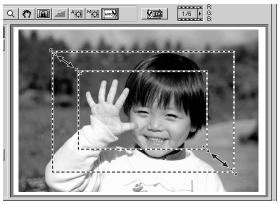
Clicking the CHP button cycles the cropping frame through the “C,” “H,” and “P” APS framing formats. The cropping area can be moved by placing the mouse pointer within the marquee (dotted line) and then clicking and dragging. The cropping area can also be adjusted manually (p. 38). When using the image-correction tools, only the cropped area is displayed.



Manual cropping

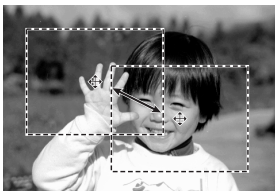
Cropping is a method of recomposing the image by eliminating unnecessary space around the subject. Many images are improved by cutting out distracting elements in the background.

Clicking the auto-cropping button to display the cropping frame marquee.



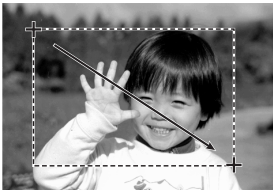
To enlarge or reduce the cropping frame, place the mouse pointer over the corners or sides of the cropping frame; the pointer will change to a double arrow. Simply click and drag the edge of the frame to adjust the cropping area.

To move the cropping frame, place the mouse pointer in the center of the cropping frame; the pointer will change to a four-pointed arrow. Simply click and drag the entire frame over the image area.



With the pointer is outside the cropping frame, click and drag to define a new cropping frame.

Pressing the auto-cropping button again resets the cropping frame around the image area. The cropping frame can be reset to cover the full prescan area by pressing the control key (Windows) or the command key (Macintosh) and A key at the same time.



Prescanning the cropped area

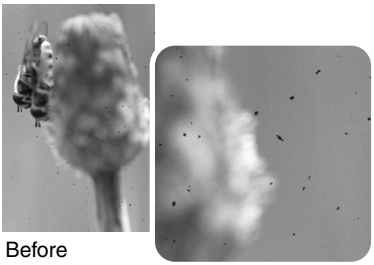
Click the crop-prescan button to make a prescan of the cropped area. To view the entire image again, press the prescan button; the cropping frame can be adjusted or reset.

Auto Dust Brush – Removing the effect of dust

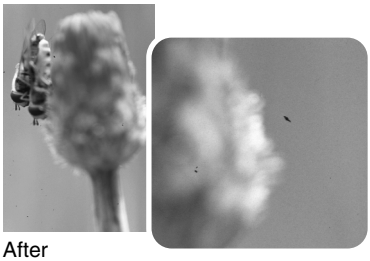
The Auto Dust Brush reduces the visibility of fine dust particles on the film surface that cannot be removed with a brush or blower. Auto Dust Brush processing is applied to all the images in the holder. The scanning time increases with the use of the Auto Dust Brush. This function cannot be used with 16-bit linear color depth (p. 45).

Before using the Auto Dust Brush, remove all visible dust from the film, see handling film on page 20. Select the autofocus-at-scan option in the preference window (p. 45), or adjust the focus with point AF or manual focus (p. 52). The degree of retouching can be adjusted in the preference window.

The Auto Dust Brush effect varies with the images and exposure control settings. Image details may affect the processing; make multiple scans at different degrees of retouching. The dust-removal effect is greater at high input resolutions.



Before



After

Click the Auto Dust Brush button before making the final scan; the dust removal processing will be done at that time. The effect of Auto Dust Brush cannot be evaluated in the prescan image.

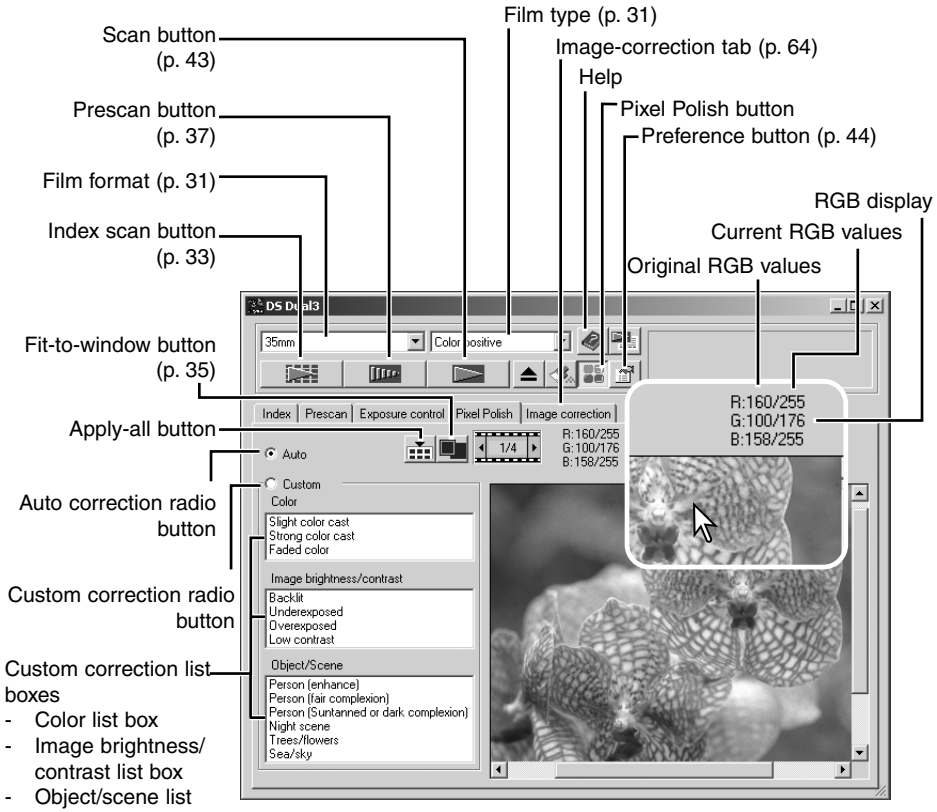
To cancel the Auto Dust Brush, click the Auto Dust Brush button again. Once selected, the Auto Dust Brush will remain active until canceled.

Pixel Polish – Correcting images automatically

Pixel Polish makes automatic image corrections or custom corrections using straightforward parameters displayed in the window. Once the Pixel Polish button is pressed, corrections are immediately applied to all the frames in the holder. Image corrections performed prior to the use of the Pixel Polish function are all reset for all images in the holder. Scanning time increases with the use of Pixel Polish. Pixel Polish cannot be used with black and white film, 16-bit or 16-bit linear color depth (p. 45).

With Macintosh operating systems, to use Pixel Polish when the utility is launched through Photoshop or Photoshop Elements, the largest unused block of memory in the system must be more than 128MB. To check and redistribute the system memory allocation, see page 87.

Main window and Pixel Polish tab



The RGB display will show the color values for any point on the image. Simply place the mouse pointer on the image area to see the RGB values of that point. Pressing the shift key (Windows) or command key (Macintosh) will display the CMY values.

Clicking the Pixel Polish button on the main window automatically corrects all the images in the film holder replacing any previous corrections. The correction are immediately applied to the prescan image.

Once applied, Pixel Polish will remain active until canceled; to cancel Pixel Polish and return to the original image, click the Pixel Polish button again. To reapply any image corrections made before clicking the Pixel Polish button, open the image in the image-correction tab and press the undo button.

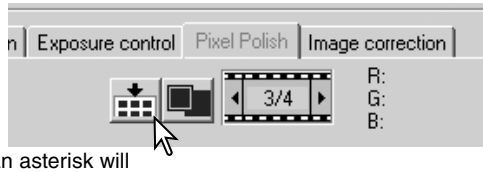
Click the Pixel Polish tab to open the window. If a prescan has not been made, the scanner will make one automatically.

Select the appropriate radio button, auto or custom. All corrections will be reflected in the displayed image.

The auto correction radio button is initially selected. All images in the holder are corrected automatically.

Click the custom correction radio button to make customized corrections to individual images. Simply click the description in the color, image brightness / contrast, and object / scene list boxes which best describes the image. To deselect a description, click on it again (Windows) or press the keyboard command key and click on it again (Macintosh).

Click the apply-all button to apply the custom settings to all the images in the film holder. To reset all the images to the auto correction setting, click the auto correction radio button and then the apply-all button.



If the custom correction radio button is selected, the Pixel Polish tab will be highlighted in red (Windows), or an asterisk will be displayed on the tab (Macintosh).

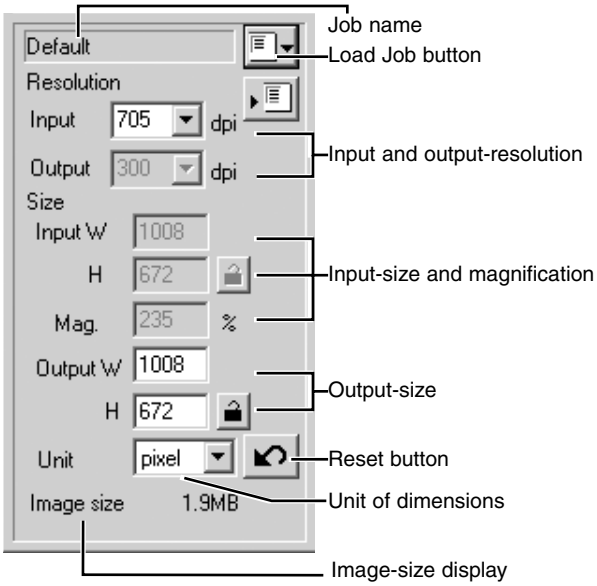
The effect of Pixel Polish is based on the actual image area scanned. If an image is cropped (p.37-38) or the input size changed (p. 42, 54) after Pixel Polish has been applied, click the crop-prescan button (p. 38) to view the results of the processing.

Making the final scan using Jobs

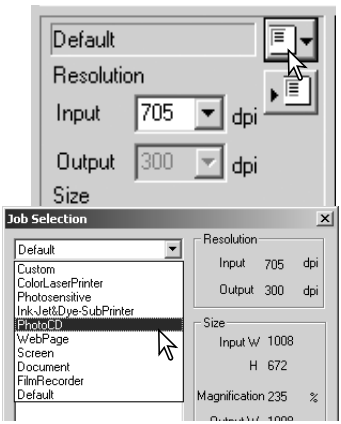
The final scan saves the image data and any changes made to it with the scanner software in your computer. Before making the final scan, the input and output parameters must be specified. While it's possible to input the scan settings yourself, DiMAGE Scan Dual III Utility gives you an easier choice – the Job function. This function automatically loads the scan settings based on the final use of the image.

The scan-setting dialog box is located on the left of both the index scan and prescan windows.

The DiMAGE Scan Dual III Utility contains over 100 pre-installed Job files to cover a wide range of image use. To create your own Job files or to input the scan settings manually, see page 54-57. For a list of Job parameters, see page 82.



Click the load Job button. The Job-selection dialog box will open.

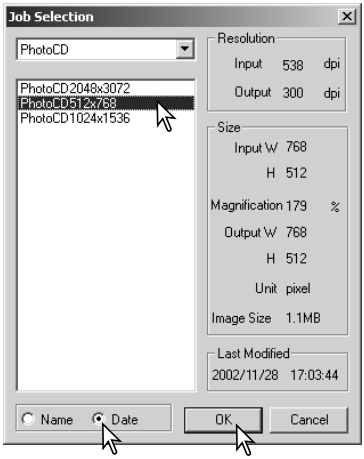


Select a Job category from the drop-down list. For details, see the Job file list on page 82.

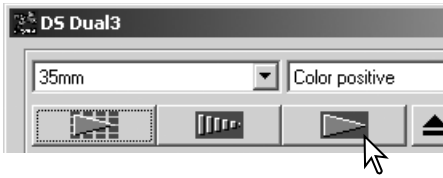
Click a Job file name to select it. The Job names can be sorted chronologically or alphabetically by clicking the name or date radio buttons at the bottom of the dialog box.

The scan settings of the selected Job file are displayed on the right side of the window. The Job settings vary between the 35mm and APS film formats, see the Job file list on page 82. Click the OK button to apply the Job settings.

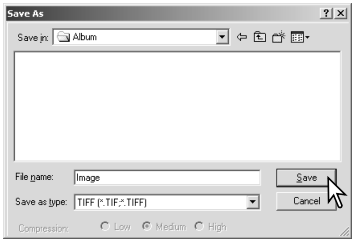
When the Job file is loaded, a cropping frame will appear on the image. The frame is proportional to the output use specified with the Job. The frame can be resized, but the proportions will remain the same; the input and output values are automatically adjusted to match the change to the cropping frame.
Scan settings can be set for individual images in the film holder. Once made, they will remain in effect until changed.



Click the scan button in the main window to start the final scan. If the DiMAGE Scan Dual III Utility was opened in an image-processing application, the scanned image will be opened in that application. If the utility is used by itself, the save as dialog box will open.



On the save-as dialog box, enter the file name, and select the file destination and file format for the image data. When scanning multiple images, the index thumbnail frame number will be added to the file name automatically. See page 29 for information about the file formats. When saving JPEG files, the compression ratio can be specified. Click the save button to complete the final scan.



The procedure to cancel the scan is the same as the index scan, see the canceling the index scan section on page (p.33).

When using a USB storage device on the same bus as the scanner, save the data on the computer's hard disk first before transferring it to the storage device. Saving the scanned data directly to the device may corrupt the image data.

Quitting the DiMAGE Scan Dual III Utility

To quit the DiMAGE Scan Dual III Utility, click the close button on the upper right corner of the window. If the close-utility-after-scanning option is active in the preference window, the utility will automatically shut down. Turn off the scanner with the power switch on the front of the unit (p. 19).

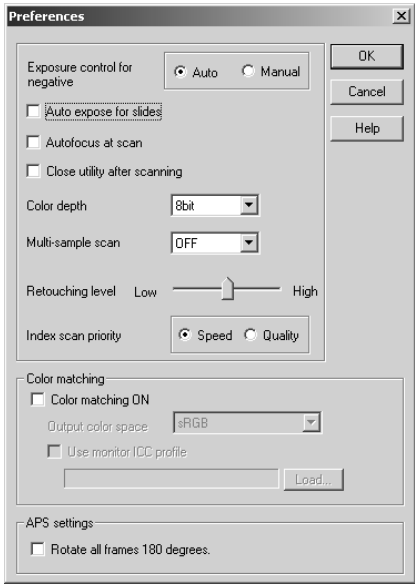
This section covers the advanced scanning tools in the DiMAGE Scan Dual III Utility. The basic scanning section on pages 31 through 43 should be read before continuing.

Setting scanner preferences

Click the preferences button in the main window to open the preferences dialog box.

Select the preferences options to customize scanner operations. Click the OK button to apply the preference settings and close the window.

The following settings are available in the preference window.



Exposure control for negatives: auto exposure adjusts the scanner exposure to compensate for the density of the negative. The manual setting uses a fixed exposure regardless of the density of the film. Manual exposure can show the exposure difference in a bracket series. When using AE lock or AE area selection with negatives (p. 50), the auto radio button must be checked.

Auto-expose-for-slides check box: this option activates the auto-exposure function when scanning slides. Since the density range of slides is relatively uniform, adjusting the expose for each slide is usually unnecessary. However, when scanning an underexposed or overexposed slide, the auto exposure system can compensate for the unusual image density. When using AE lock or AE area selection with slide film (p. 50), the auto-expose-for-slide box must be checked.

Autofocus-at-scan check box: this option activates the autofocus function during the prescan and final scan. The scanner's autofocus system uses the center of the image to determine focus. When using the Auto Dust Brush, the use of autofocus is recommended. The autofocus function increases the scanning time.

Close-utility-after-scanning check box: this option closes the DiMAGE Scan Dual III Utility after the final scan when using the scanner with an image-processing application. Activate this function when individual images will be scanned and then processed or retouched in another application. However, uncheck the box when multiple images need to be scanned before retouching.

Color-depth list box: this option specifies the color depth of the scanned image. The default setting is 8 bit for each RGB channel. 16-bit and 16-bit linear can be made. Because 16 bit linear color depth does not make any gamma corrections, the scan of a negative will produce a negative image. 16-bit and 16-bit linear images can only be saved in the TIFF file format. Auto Dust Brush cannot be used with 16-bit linear color depth. Pixel Polish cannot be used with 16-bit and 16-bit linear color depth. Some image-processing applications including Photoshop Elements cannot open 16-bit image files.

Multi-sample list box: a multi-sample scans reduces random noise in the image by analyzing the data of each sample scan; 2, 4, and 8 samples can be made. The more samples taken, the less random noise in the image and the longer the scanning time.

Auto Dust Brush level slider: this slider adjusts the degree of retouching in three levels. The level is initially set to medium. The effect of the Auto Dust Brush cannot be evaluated in the prescan image. This function is activated with the Auto Dust Brush button in the main window (p. 39).

Index-scan-priority radio button: this option allows the selection of high-speed index scans or a quality index scans with prescans. Simply click the appropriate radio button.

The speed setting allows faster index scans. Only index thumbnails are created with this setting. The scanner will make separate scans when prescans are required. The autofocus function is disabled during the index scan.

The quality setting makes an index thumbnail and prescan of each image. Double clicking on the index thumbnail immediately displays the larger prescan image. Prescan images are easier to use to make critical decisions over image quality. Image corrections can only be applied to prescans. The setting increases index scanning time.

Color-matching: this option turns color matching on. For more information, see the color matching section on page 60.

Rotate-all-frames-180-degrees check box: this option rotates all APS index frames 180 degrees in the index scan window.

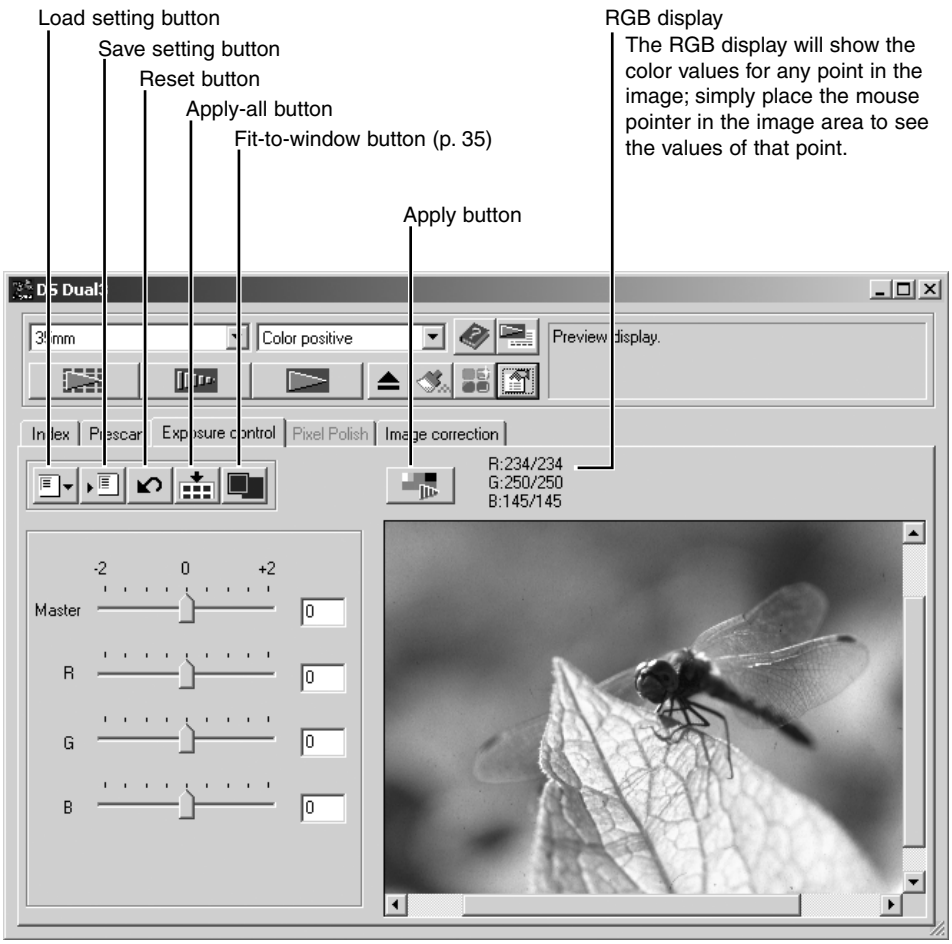
Cancel button: to cancel any settings made and close the window.

Help button: to open the help window.

OK button: to apply the preference settings and close the window.

Exposure-control tab

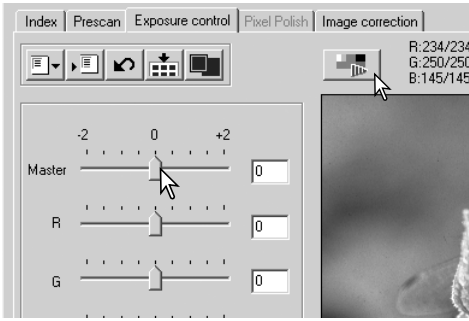
The exposure control is not an image-processing tool. No gamma or contrast changes can be made. The exposure-control tab allows the scanner's exposure system to be customized to specific films, lighting, or a personal exposure index based on the film, processing, lens, and shutter combination. This can also be used to compensate for badly exposed film.
Simply click the exposure-control tab to display the selected image. If a prescan has not been made, the scanner will make one automatically.



If any changes are made to exposure, the exposure control tab will be highlighted in red (Windows), or an asterisk will be displayed on the tab (Macintosh).

The master slider and text box control the overall exposure. The R, G, and B sliders and text boxes are used to compensate for any color shift.

Adjust the sliders or enter values between ±2 in 0.1 increments in the text boxes. Press the apply button to view the effect on the preview image. Repeat until the desired result is achieved. To cancel all settings, click the reset button and press the apply button to initialize the preview image.



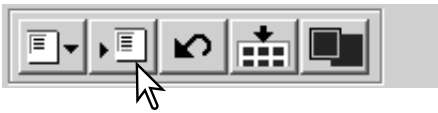
When using autoexposure, adjustments are made in reference to the exposure determined by the AE system. To calibrate the scanner in reference to a standard exposure, turn the autoexposure functions off in the preference window (p. 44); set exposure control for negatives to manual or uncheck the auto-exposure for slides check box. This is recommended when making settings for specific films.

Click the apply-all button to use the exposure-control settings for all the images in the film holder. If autoexposure is used, the exposure setting for the displayed image is fixed and applied to the other images in the holder.

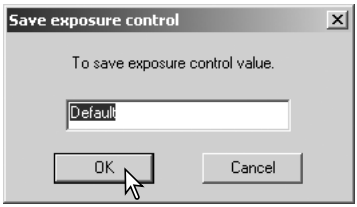
To cancel changes to exposure once the apply-all function has been used, click the reset button, then the apply-all button.

Saving exposure settings

Click the save setting button to open the save window.



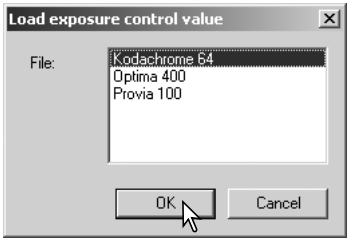
Enter the name for the setting file. Click the OK button.



Loading exposure settings

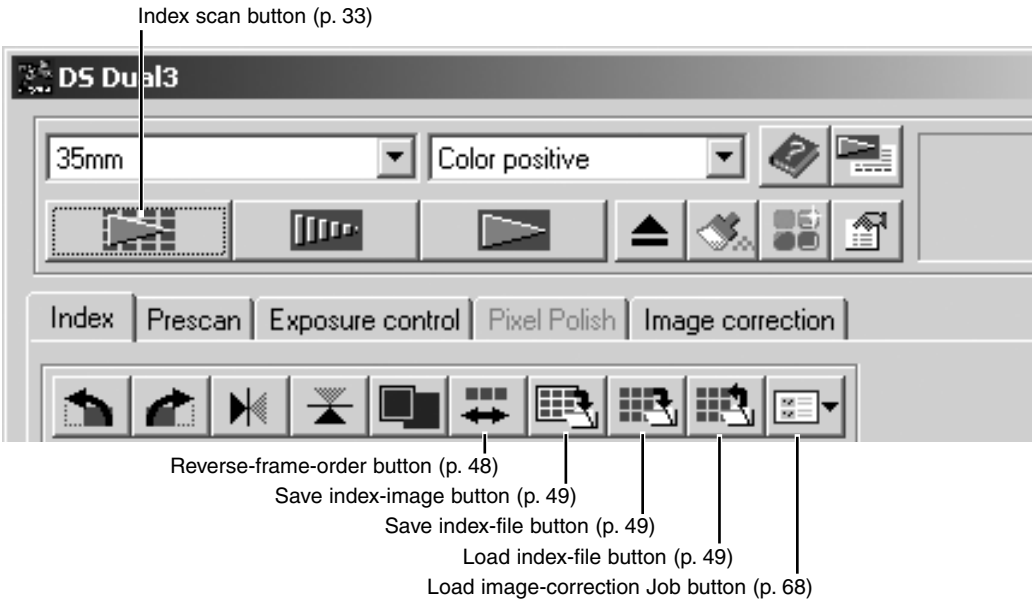
Click the load setting button to open the load window.

Click on the file name to highlight it. Click the OK button to select the settings to apply to the image displayed in the exposure-control tab. Confirm the autoexposure settings in the preference window (p. 44). Click the apply button to view the results.



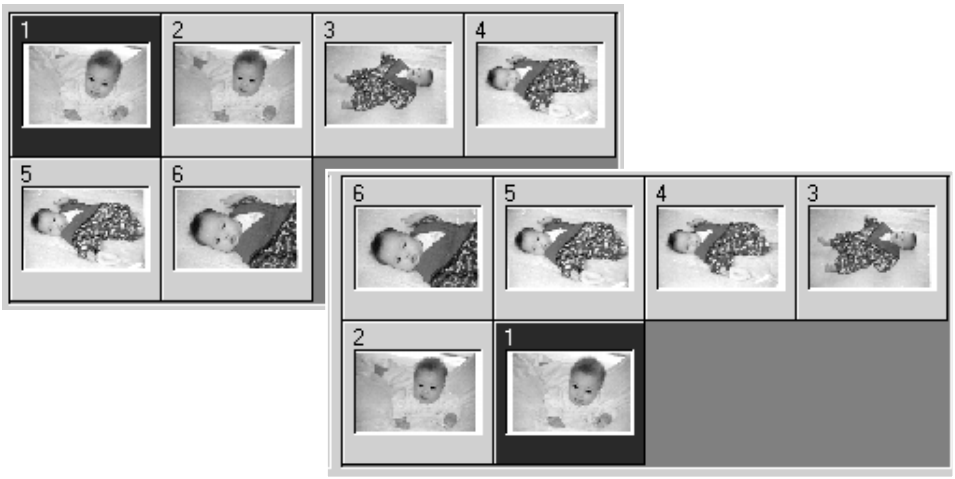
To delete a setting file, open the load window and click on the file name to highlight it. Use the keyboard delete key to erase the file.

More index scan functions



Reverse frame order

Some cameras reverse-wind the film so the last frame is exposed at the beginning of the roll. When scanning film strips, the order of the index thumbnails can be reversed to correct the chronology by simply clicking the reverse-frame-order button. When the reverse-frame-order button is clicked again, the frame order follows the film holder frame order.

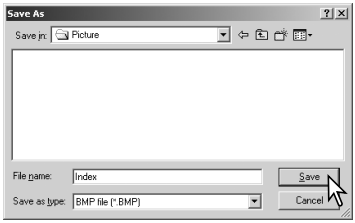


Saving the index images

The displayed thumbnail images can be saved in one image file. An index scan of all the frames in the film holder, including empty frames, must be made before the index thumbnails can be saved.

Click the save index-image button. The standard save-as dialog box will appear.

Enter the file name, and select the file destination and file format for the image data. Click the save button. File formats that can be selected with Windows operating systems are Bitmap (BTM) or JPEG, and with Macintosh are Pict or JPEG. The film holder does not have to be in the scanner to save the images.

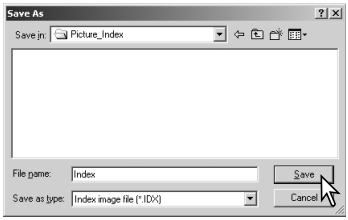


Saving an index file

The index thumbnails can be saved as an index file. The index file can be loaded into the scanner so that the index scan does not need to be made again. The index image file format is unique to this software. An index scan of all the frames in the film holder, including empty frames, must be made before the index thumbnails can be saved.

Click the save index-file button. The standard save-as dialog box will appear.

Enter the file name and select the file destination. Click the save button. The film holder does not have to be in the scanner to save the file.

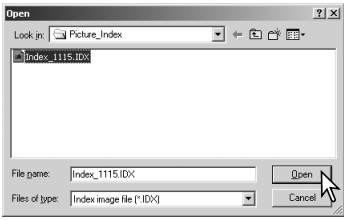


Loading an index file

An index file can be displayed in the index window of the utility software.

Click the load index-file button. The open dialog box will appear.

Select the index file to be loaded. Click the open button. The current index display will be replaced with the images in the new file.

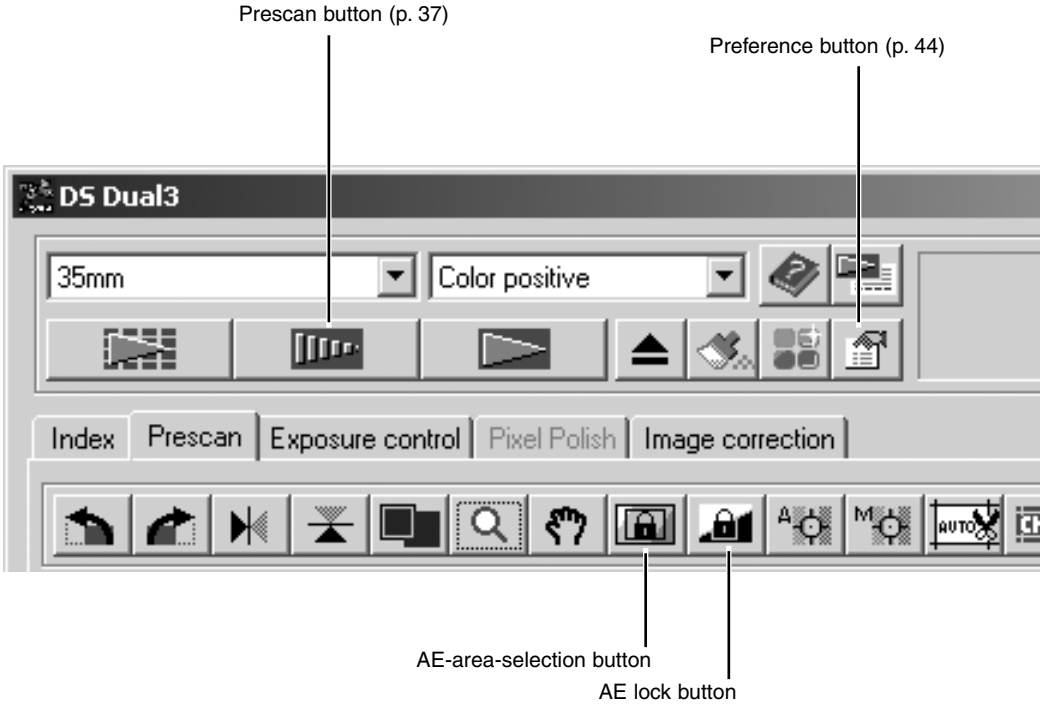


Autoexposure control – More prescan functions

Autoexposure adjusts the scanner exposure to compensate for the density of the film. To use the autoexposure function with color slides, the auto-expose-for-slides option must be checked in the preferences box. To use it with color negatives, the exposure control for negatives must be set to auto in the preferences box (p. 44).

AE area selection allows the use of a small area within the image to determine the scan exposure. Use AE area selection with high or low key images, or when the film has been badly exposed.

The AE lock function sets the scanner exposure based on the exposure determined for a specific prescan with or without the use of AE area selection. This exposure can be applied to scans of different images. This function is useful when scanning a series of high and low-key images that have consistent exposures. By locking the exposure on one frame when scanning a bracket series, the scans of the other frames will show the exposure difference in the each frame of the series.



AE area selection

Click the AE-area-selection button after prescanning the image.

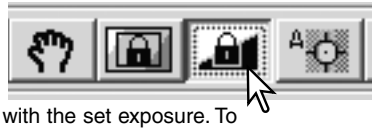
Pressing the shift key changes the dotted cropping frame to the solid AE area frame. While pressing the shift key, use the mouse to adjust and move the AE area. The methods used to manipulate the frame are the same as the cropping frame except that the shift key must be held, see manual cropping section on page 38.

Place the AE area over the section of the image to be used to determine the exposure. Usually placing the area over the subject of the picture will produce excellent results. The area should represent on average the mid-tone of the image.

Click the prescan button to view the effect on the exposure. AE area selection can be canceled by pressing the AE-area-selection button again.

AE lock

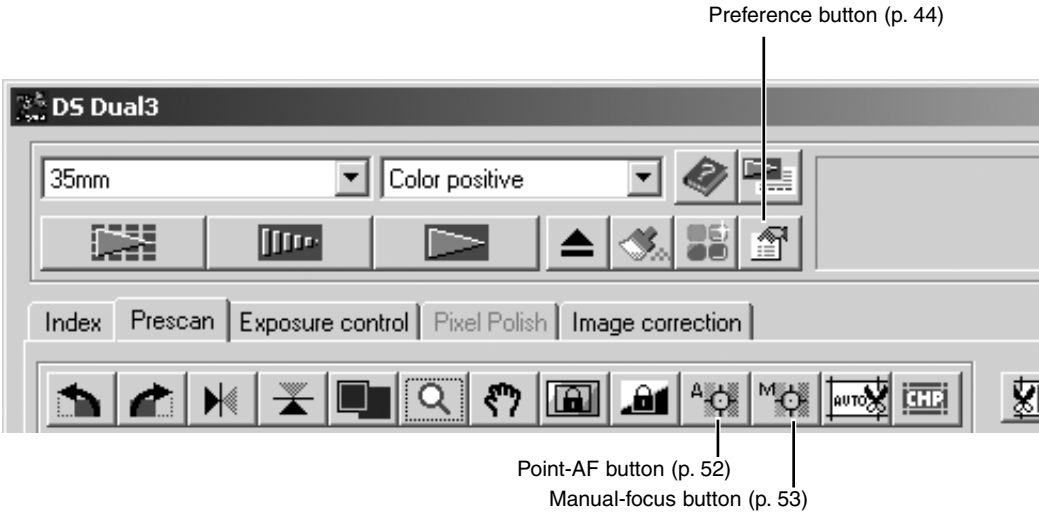
After making a prescan or setting the exposure of the reference image with the AE-area-selection function, click the AE lock button to fix the scanner's exposure.



Select another image and click the prescan button to view the result with the set exposure. To cancel the AE lock, click the AE lock button again. The prescan and final scan will be made with the locked exposure setting until the AE lock is canceled.

Focusing the scanner – More prescan functions

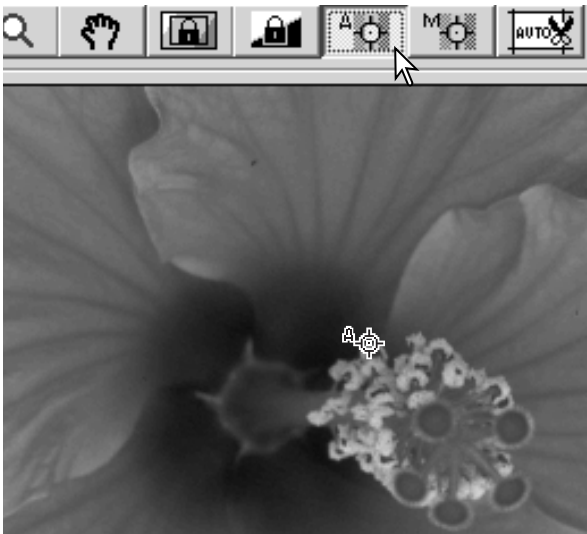
Use the focusing functions if the film is warped or curled. Three options are available: autofocus, Point AF, and manual focus. Autofocus uses the center of image to determine the focus is activated with the autofocus-at-scan option in the preferences dialog box (p. 44). Point AF uses a point specified in the image to determine the focus. The scanner can also be focused manually using a selected point. Point AF and manual focus can be used for individual images.



Point AF (Autofocus)

The point AF focuses on a select point within the image. For best results when using point AF, select an area within the image with contrast or detail. The point AF function cannot focus on a low-contrast image area such as a cloudless or overcast sky.

Click the point-AF button. The mouse pointer will change to the point-AF icon. To cancel the function, click the point-AF button again.

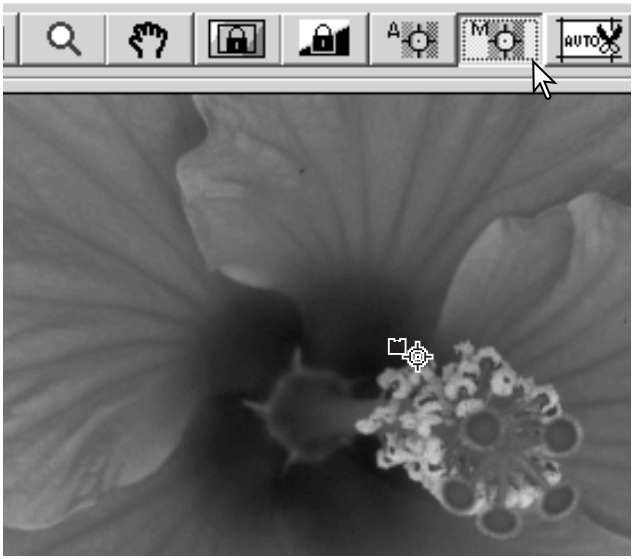


Click on the area of image to be used for focus. Autofocus will begin and a new prescan will be displayed.

Manual focus

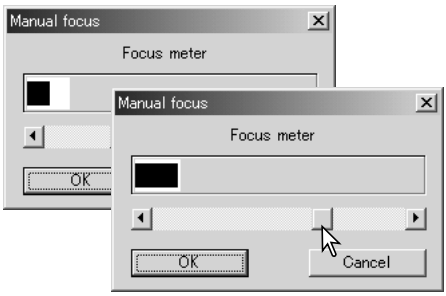
The scanner can be focused manually using the focus meter. For best results, select an area within the image with contrast or detail. The manual focus functions cannot focus on a low-contrast image area such as a cloudless or overcast sky.

Click the manual-focus button. The mouse pointer will change to the manual-focus icon. To cancel the function, click the manual-focus button again.

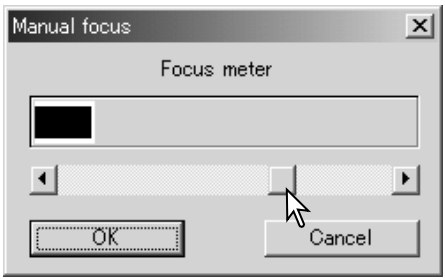


Click on the area of image to be used for focus. The focus meter window will appear.

Adjust the slider using the mouse until the black and white bars are at their longest extension for sharpest focus. The black bar indicates the change in focus. The white bar indicates the longest extent of the black bar and the point of sharpest focus.



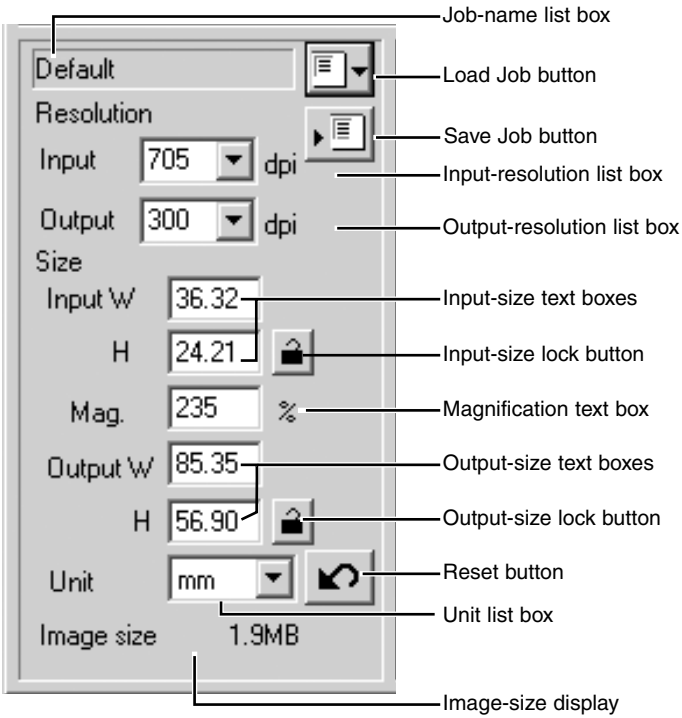
Click OK to set the focus. A new prescan will start and replace the previous image.



Inputting scan settings manually

Settings for the final scan such as input or output resolution and size can be manually made for individual images in the index scan or prescan windows. Once made, they will remain in effect until changed.

Scan setting window



Input-resolution list box: values can be selected among the drop-down list or be entered into the box directly. Values between 282 and 2820 dpi can be selected among the drop-down list. Values between 176 and 2820 can be entered into the box directly.

Output-resolution list box: values between 36 and 2400 dpi can be selected among the drop-down list or be entered into the box directly. Output-resolution cannot be entered if pixel is selected in the unit list box.

Input-size text box: input size is determined by either the cropping frame dimensions or the values entered in the width and height boxes. The cropping frame will adjust to any value entered. Input-size cannot be entered if pixel is selected in the unit list box.

Input-size lock button: to lock the input values. The cropping frame can be moved, but not resized while this button is clicked. Clicking the button again releases the lock. The input-size lock button cannot be used if pixel is selected in the unit list box.

Magnification text box: to set image magnification. This value equals the input resolution divided by the output resolution, or the output size divided by the input size. The magnification text box cannot be used if pixel is selected in the unit list box.

When the input size and output size are unlocked, the input resolution and output size vary according to the entered magnification value. When the output size is locked, the input resolution and input size vary according to the entered magnification value. When the input size is locked, the input resolution and output size vary according to the entered magnification.

Output-size text box: output size is determined by either the cropping frame dimensions or the values entered in the width and height boxes. The width and height of the output image can be directly entered into the text boxes; the input resolution, input size, and cropping frame adjust according to the entered dimensions.

Output-size lock button: to lock the output size values.

Unit list box: the input and output size unit can be changed: pixels, millimeters, centimeters, inches, pica, and points.

Image size display: indicates the file size of the image.

Reset button: to initialize all current settings.

About resolution and output size

Resolution can be expressed in dpi (dots per inch). This refers to how many pixels are placed along one linear inch. A resolution of 350 dpi, which is commonly used in commercial printing, means that an area of one square inch would use 122,500 pixels. The larger the resolution, the greater the detail in the image. However, as the resolution increases, so does the file size.

The image resolution depends on the resolution of the output device. A printer with a resolution of 150 dpi will not be able to print a 300 dpi file any better than a 150 dpi file; the 300 dpi file will just be four-times larger. Once the output resolution is determined, the input resolution can be calculated from the magnification needed to match the output.

$$\frac{\text{Input resolution}}{\text{Output resolution}} = \frac{\text{Output size}}{\text{Input size}} = \text{Magnification factor}$$

For example, to make a 144 mm x 96 mm print at a resolution of 150 dpi from 35mm film (image size: 36mm x 24mm), the magnification can be calculated by dividing the print dimensions by the film dimensions: 96 mm / 24 mm = 4 times. The input resolution can be determined from the magnification factor: 150 dpi X 4 = 600 dpi.

Scan setting examples

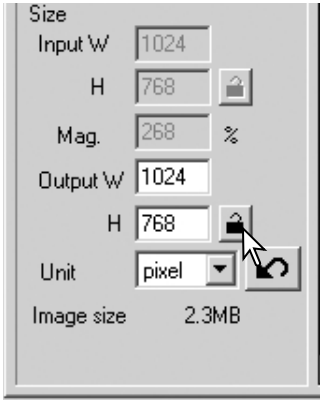
Example 1: setting the scanner output by pixels. This example creates an image with the pixel dimension of 1024 X 768.

Select pixel from the unit list box. The output-resolution and input-size boxes are deselected.

Enter the dpi resolution for the output size; 1024 for the width and 768 for the height. Click the output-size lock button to fix the values; the output-size boxes will be deselected.

Use the mouse to adjust the cropping frame over the prescan image to define the final scanning area. Click on the frame of the cropping area to resize the box. The input resolution will adjust according to the cropping area. Click and drag the center of the area to move the frame.

The scan settings are complete and the final scan can be made. Once made, scan settings remain in effect until changed.



Example 2: setting output by print size and output resolution. This example creates a 148mm X 100mm image to be printed on a 300 dpi printer.

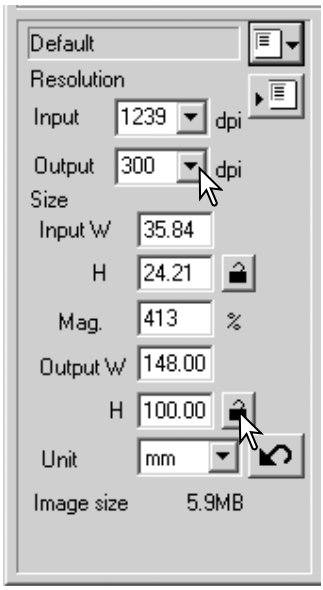
Select millimeters from the unit list box.

Enter the output resolution of the printer in the output-resolution list box: 300.

Enter the output size; 148 for the width and 100 for the height. Click on the output-size lock button to fix the values.

Use the mouse to adjust the cropping frame over the prescan image to define the final scanning area. Click on the frame of the cropping area to resize the box; the input resolution will adjust according to the cropping area. Click and drag the center of the area to move the frame.

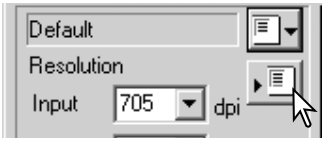
The scan settings are complete and the final scan can be made. Once made, scan settings remain in effect until changed.

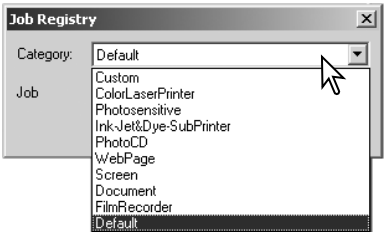


Saving scan settings as a Job

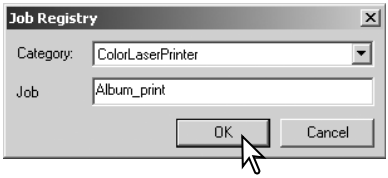
Frequently used scan settings can be saved.

With the settings to be saved in the scan setting window, click the save Job button. The Job-registry dialog box will open.





Select the category in which to save the settings from the drop-down menu.

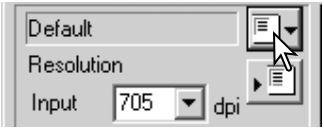


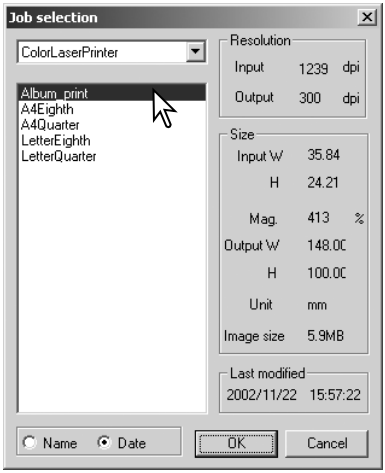
Enter the Job name. Click OK to save the settings. See page 42 to load a Job.

Deleting a Job

A Job file can be deleted. Once deleted, it can not be recovered.

Click the load Job button.





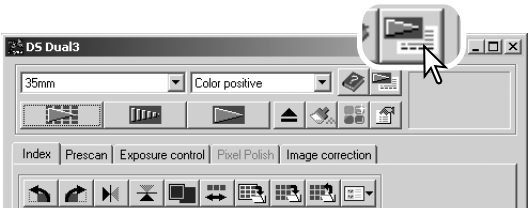
Select the Job file to be deleted from the Job categories in the selection window. Use the following key(s) to delete the selected file:

Windows – delete key
Macintosh – command key + D.

Custom Wizard

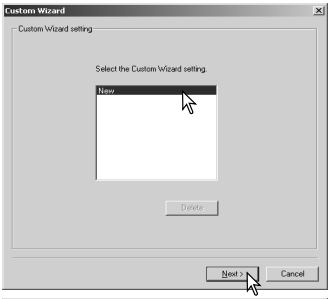
The Custom Wizard is an automated scanning routine.

Insert a film holder into the scanner. Click the Custom Wizard button.



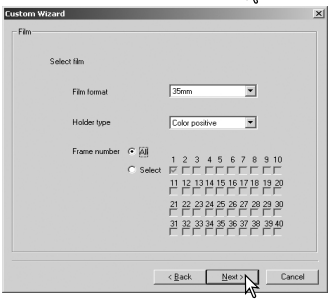
On the Custom-Wizard-setting dialog box, select New from the Custom Wizard settings. Click the next button.

If previous Custom Wizard settings have been saved, they will be displayed in this window. To use any settings, simply select it with the mouse.



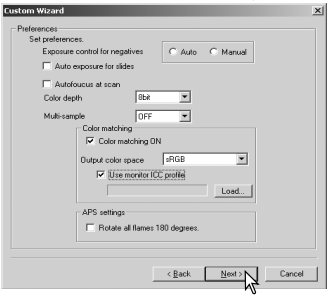
Set up the dialog box for the film and holder in use. Select the frame number(s) of the images to be scanned. The frame number refers to the frame number of the holder. Settings made in the Custom Wizard will be applied to all the selected frames.

Click the next button to continue.



Select scanning preferences in the dialog box. Click the next button to continue.

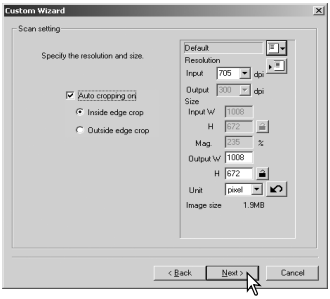
For information on the preference settings, see page 44. For information on color matching, refer to page 60.



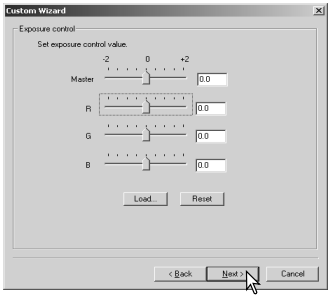
Enter scan settings. Click the next button to continue.

See pages 42 and 54 for details on Jobs and manual scan settings. When the window opens, the last scan settings made will be displayed.

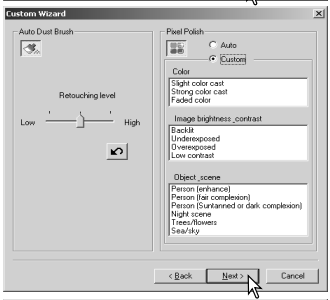
See page 37 for information on auto-cropping. Inside-edge cropping is recommended for mounted slides. The auto-cropping function will take priority over any scan settings entered.



Make any adjustments to the scanner exposure. Previously saved settings can be loaded. See page 46 for more information. Click the next button to continue.

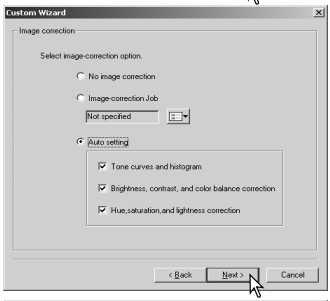


The Auto Dust Brush (p. 39) and Pixel Polish (p. 40) functions can be used in the scan. Click the Auto Dust Brush button to activate the dust-removal function, then set the degree of processing with the slider. Click the Pixel Polish button to activate the automatic image-correction function, then specify automatic or custom corrections. Click the next button to continue. When 16-bit linear color depth is selected in the preferences window, this screen will not appear.



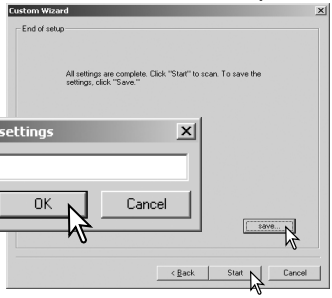
Select image-correction settings. Click the next button to continue.

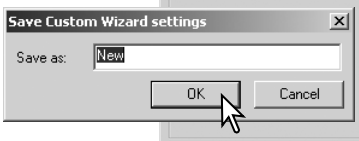
Image corrections can be made by loading an image-correction Job (p. 68). The auto-setting functions automatically correct the scanned image: the tone curve and histogram setting improves color and contrast: the brightness, contrast, and color-balance setting improves contrast and brightness: the hue, saturation, and lightness setting improves saturation.



Click the save button to save the Custom Wizard settings. Enter the file name in the save window and click OK. The next time the Custom Wizard is used, those settings can be selected in the Custom Wizard setting dialog box.

Click the start button to begin automatic scanning.





When the scanning is complete, the film holder will be ejected or the APS cassette in the optional adapter will be rewound automatically. To continue scanning with the same settings, change the film in the film holder and click the start button. To quit scanning, click the quit button.

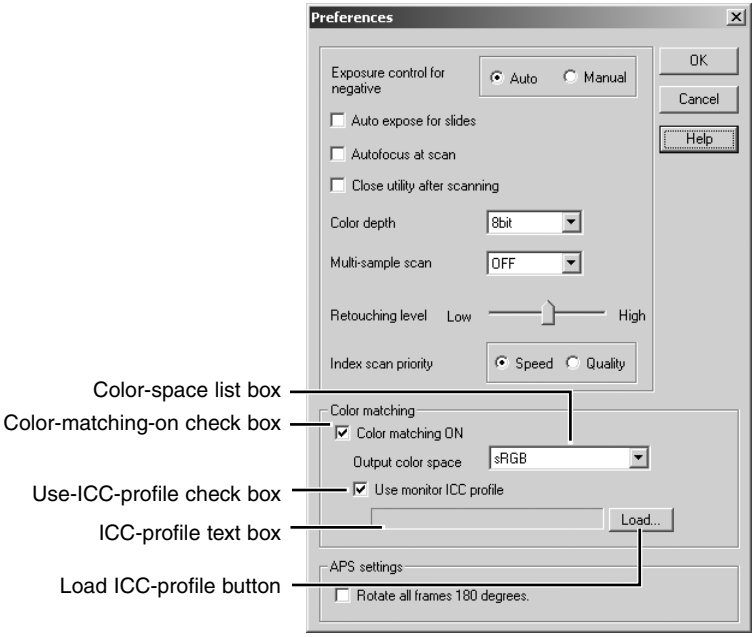
Color matching

Each output device (monitor or printer) defines color and contrast differently. To ensure the output images are reproduced to the original scanned data as accurately as possible, the color space for both devices must be defined.

The DiMAGE Scan Dual III color matching function matches the scanned color with specified color spaces. The color matching system can use the monitor's ICC profile to display the image as accurately as possible.

Color matching is activated in the preferences box. Color matching increases the scanning time.

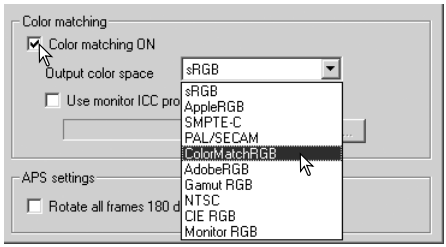
Click the preferences button to access the color-matching function.



Setting the output color space

Click the color-matching-on check box.

Select the output color space from the color-space drop-down menu.



The choice of output color space depends on how the image will be reproduced. For most home use where the image is displayed on a monitor or printed with a small printer, sRGB color space is adequate. Other color spaces have been included for professional and technical applications. For recommendations for color space use, see page 63.

sRGB: the color space promoted by Hewlett Packard and Microsoft. Since it reflects the average PC monitor characteristics, it is considered to be the standard for multi-media and Internet usage. sRGB is not suitable for professional prepress applications because of its narrow reproduction range.

Apple RGB: widely used in DTP. It is the standard color space in many common graphic arts and design applications: Adobe Illustrator, Photoshop, etc.

SMPTE-C: this is the current standard used in television broadcasting in the United States.

PAL/SECOM: this is the current standard used in television broadcasting in Europe.

ColorMatch RGB: this color space standard has a wide color space and is ideal for use with Radius Press View monitors, which are commonly used in prepress production.

Adobe RGB: this color space standard is wider than ColorMatch RGB. The extensive color range makes it ideal for prepress use. However, the range is so great that it includes many colors that cannot be printed with a four-color printing process.

Gamut RGB: utilizing the color coordinates of the spectrum, this standard offers an extremely extensive range of colors. However, most of the colors that can be generated cannot be reproduced on standard computer monitors or by printing technology.

NTSC: the current television broadcasting standard used in Japan.

CIE RGB: this color space is defined by the CIE (Commission Internationale d`Eclairage).

Monitor RGB: this color space is defined by the monitor's ICC profile. See setting the monitor ICC profile section on page 62.

Setting the monitor ICC profile

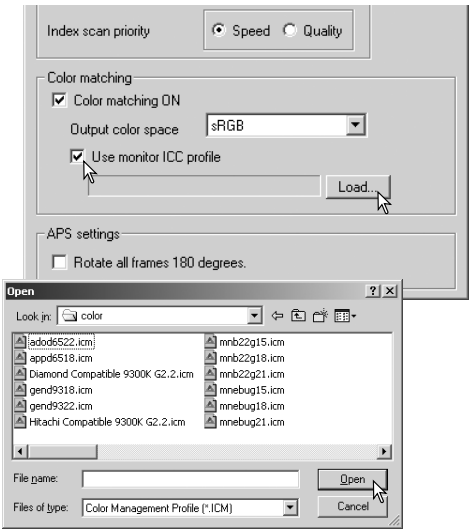
The ICC profile for a specific monitor can be used. Refer to the monitor instruction manual for the profile name.

Click the use-ICC-profile check box.

Click the load ICC-profile button. The operating systems file-open dialog box will open.

Open the ICC profile for the monitor in use.

Click OK in the preferences box to set the ICC profile.



Monitor ICC profiles can be found at the following locations:

Windows 98/98SE/Me:	[Windows] folder -> [System] folder -> [Color] folder.
Windows 2000, XP:	[WINNT] folder ->[System32] folder ->[Spool] folder ->[Drivers] folder ->[Color] folder.
Mac OS 8, 9:	[System] folder ->[ColorSync Profile] folder.
Mac OS X:	[/(root)] -> [Library] folder- >[ColorSync] folder – >[Profiles] folder –> [Displays] folder.

Scanner color profiles

When installing the scanner utility software, scanner color profiles will be automatically installed. These profiles have been included for advanced color matching with profile-to-profile conversions in sophisticated image-processing or DTP applications. When using these profiles, the color reproduced may not be the same as the color matching system in the utility software.

MLTF2840.icc – used with positive film at any color depth other than 16-bit linear
MLTF2840p.icc – used with positive film with 16-bit linear color depth.

The profiles are located in the following locations:

Windows 98/98SE/Me:	[Windows] folder -> [System] folder -> [Color] folder.
Windows 2000, XP:	[WINNT] folder ->[System32] folder ->[Spool] folder ->[Drivers] folder ->[Color] folder.
Mac OS 8, 9:	[System] folder ->[ColorSync Profile] folder.
Mac OS X:	[/(root)] -> [Users] folder – > folder with user logon name - >[Library] folder ->[ColorSync] folder ->[Profiles] folder.

Color matching recommendations

The following are recommendations for output color space and monitor ICC-profile settings with image-processing applications. Some applications have a monitor correction display function which automatically corrects the monitor display to a specific color space.

With an application with a monitor correction display function such as Adobe Photoshop ver.5 or later:

Output Color Space: Select the same color space as set in the application. With Photoshop ver. 5.0 or later, look in the color-setting option in the file menu for the profile setup window.

ICC Profile: Use the profile for the monitor in use.

With an application without a monitor correction display function such as Photoshop Elements, or when the function is disabled:

Output Color Space: Monitor RGB

ICC Profile: Use the profile for the monitor in use.

The ICC profile for a specific monitor should be available from the manufacturer. These may be downloaded from the manufacturer's web site. See the monitor's instruction manual on how to install the ICC profile.

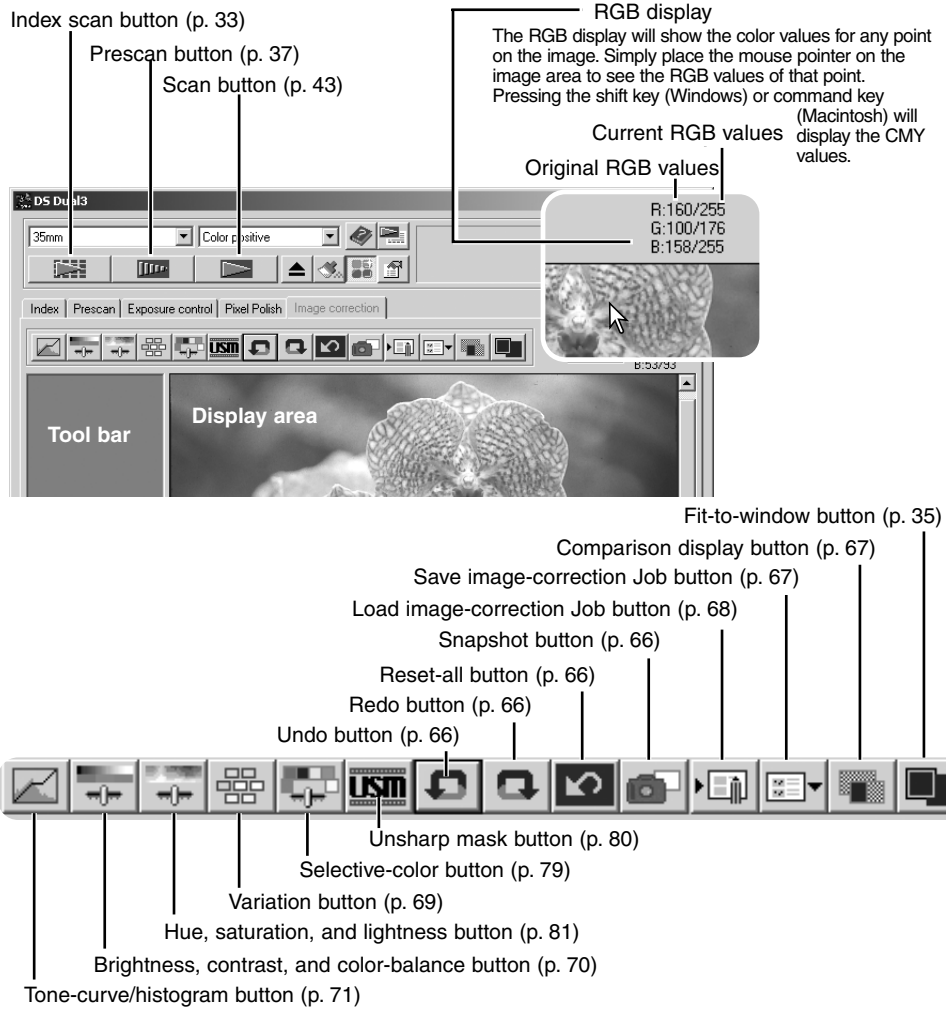
Color monitor ICC profiles can be created with one of the profile creation tools on the market. They can also be created with the monitor-adjustment-assistant function installed in a Macintosh operating system, or with Adobe gamma included in Adobe Photoshop (ver. 5.0 or later) for Windows.

Image processing tools

This section contains details on the image-processing tools as well as functions to view and save image corrections.

Main window and image-correction tab

The prescan image or a selected index image can be displayed in the correction window by simply clicking the image-correction tab. If the image has not been prescanned, a prescan will be made automatically.


Index scan button (p. 33)
Prescan button (p. 37)
Scan button (p. 43)
RGB display
The RGB display will show the color values for any point on the image. Simply place the mouse pointer on the image area to see the RGB values of that point. Pressing the shift key (Windows) or command key (Macintosh) will display the CMY values.
Current RGB values
Original RGB values
R:160/255
G:100/176
B:158/255
Index
Prescan
Exposure control
Pixel Polish
Image correction
Tool bar
Display area
Fit-to-window button (p. 35)
Comparison display button (p. 67)
Save image-correction Job button (p. 67)
Load image-correction Job button (p. 68)
Snapshot button (p. 66)
Reset-all button (p. 66)
Redo button (p. 66)
Undo button (p. 66)
Unsharp mask button (p. 80)
Selective-color button (p. 79)
Variation button (p. 69)
Hue, saturation, and lightness button (p. 81)
Brightness, contrast, and color-balance button (p. 70)
Tone-curve/histogram button (p. 71)

The utility window can be resized by clicking and dragging the bottom right corner. If any changes are made to the image, the image-correction tab will be highlighted in red.

Guide to image processing tool

There are multiple tools that will result in the same effect. One may be easier or more flexible than another. The most suitable tool for a specific job will depend not only on the required results but also the experience of the operator; all changes made with any of the palettes can be reset or undone (p. 66).

	Tools and functions	Effects
	Variation palette: a simple image processing tool. Corrections are made by choosing the best image from a group of slightly corrected samples (p. 69).	Brightness Contrast Color balance Saturation
	Brightness, contrast, and color-balance palette: corrections can be made easily with the use of sliders (p. 70).	Brightness Contrast Color balance
	Tone-curve and histogram palette: advanced image processing tool using a graphic representations of the luminance levels and distribution within the image. Adjustments can be made to highlights, mid-tones, and shadows in the color and luminance channels (p. 71-78).	Brightness Contrast Color balance
	Selective-color palette: advanced tool to make precise adjustments to a specific color group without influencing any of the other color groups in the image (p. 79).	Changes to a specific color.
	Unsharp mask: advanced tool to sharpen edges and detail in the image (p. 80).	Sharpness
	Hue, saturation, and lightness palette: advanced and creative image-processing tool to change image color and brightness (p. 81).	Hue Saturation Lightness
	Pixel Polish: an image-enhancement tool which makes automatic corrections or custom correction using straightforward parameters (p. 40).	
	Auto Dust Brush: an automatic dust-removal tool which reduces the effect of dust on the film (p. 39).	

Image processing glossary

Brightness/Lightness: The intensity of image luminance or how light or dark a picture is.

Contrast: Affects the difference between highlights and shadows; an increase in contrast makes the light tones brighter and dark tones darker. Adjustment to contrast can affect the apparent image sharpness.

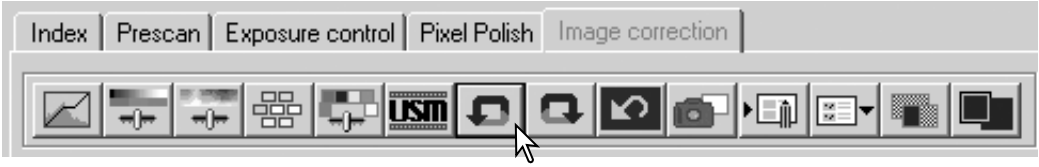
Color balance: The relative strength of the overall color of an image. Color balancing makes an image with a color cast appear natural.

Saturation: The vividness of the colors.

Hue: A distinct color within a color space. Changes to hue reassign colors depending on their position in the color space.

Sharpness: The clarity of image detail.

Undoing and redoing image corrections



The undo, redo, and reset-all buttons only affect tools used in the image-correction tab.

Click the undo button to cancel the last image correction applied to the image. The number of image corrections that can be undone depends on the computer memory capacity.

Click the redo button to reapply the last image correction canceled with the undo button.

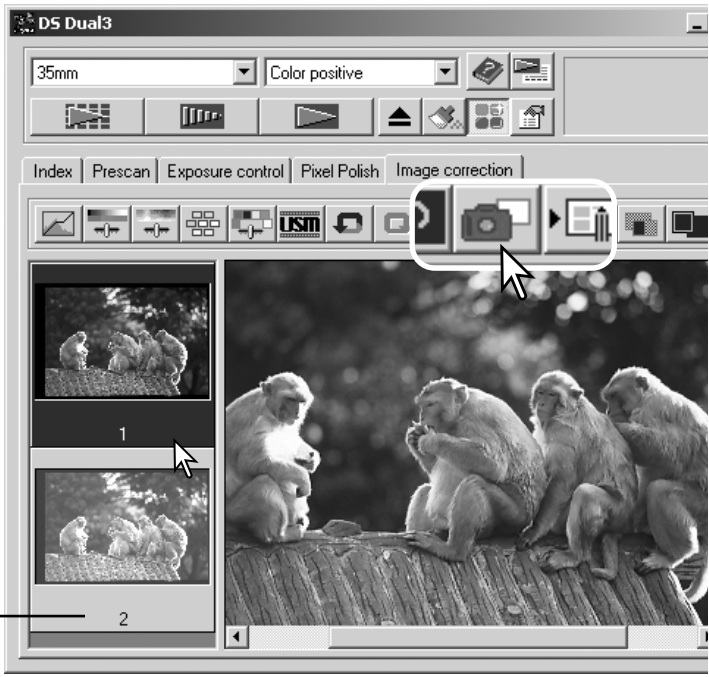
Click the reset-all button to cancel all image corrections applied to the image.

Tracking image corrections – Snapshot button

Image corrections can be stored temporarily as a thumbnail next to the displayed image. Simply click the snapshot button on the tool bar to create a thumbnail with the current image corrections.

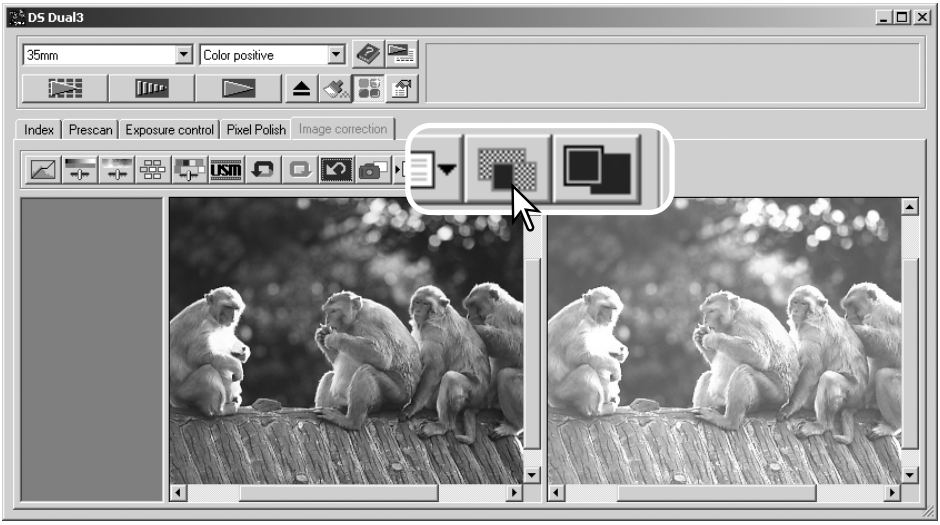
To return to a previous image correction, click on the corresponding snapshot thumbnail. The thumbnail image will replace the displayed image. The number of snapshots that can be made is only limited by the computer memory.

To delete a snapshot, click on the thumbnail and press the keyboard delete key (Windows), or command and D key (Macintosh). The thumbnails will be deleted when the software is closed.



Comparing pre and post correction images

Clicking the comparison display button divides the image display area in two. The original image is on the left and the corrected image is on the right. To display the corrected image only, click the comparison display button again.



Original image Corrected image

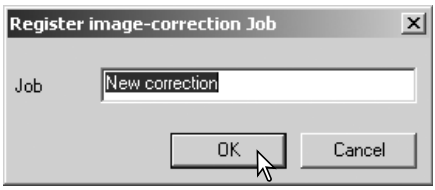
Changes made with the scroll bars on one image will be applied to the other. Using the fit-to-window button automatically resizes both images to fit the display area.

Saving image corrections

All corrections applied to an image can be saved as an image-correction Job. The Job can be loaded into the utility at any time and applied to different images. This is a time-saving function when a large number of images need too be processed with the same correction settings.

Click the save image-correction Job button to save the current image-correction settings.

Enter the Job name. Click OK to save the settings.



Loading image-correction Jobs

Display the image to be corrected in the image-correction window. Click the load image-correction Job button to load a saved image-correction setting.

Click on an image-correction Job thumbnail to select it. Click OK to apply the Job to the displayed image. Jobs are loaded into the snapshot display area. Multiple Jobs can be loaded.

Complementary colors

Knowing the complementary colors is very important in color balancing. If the image has a specific color cast, either subtracting the color or adding its complementary color will create a natural looking image.

If the image is too…	
RED	Decrease the amount of red.
GREEN	Decrease the amount of green.
BLUE	Decrease the amount of blue.
CYAN	Increase the amount of red.
MAGENTA	Increase the amount of green.
YELLOW	Increase the amount of blue.

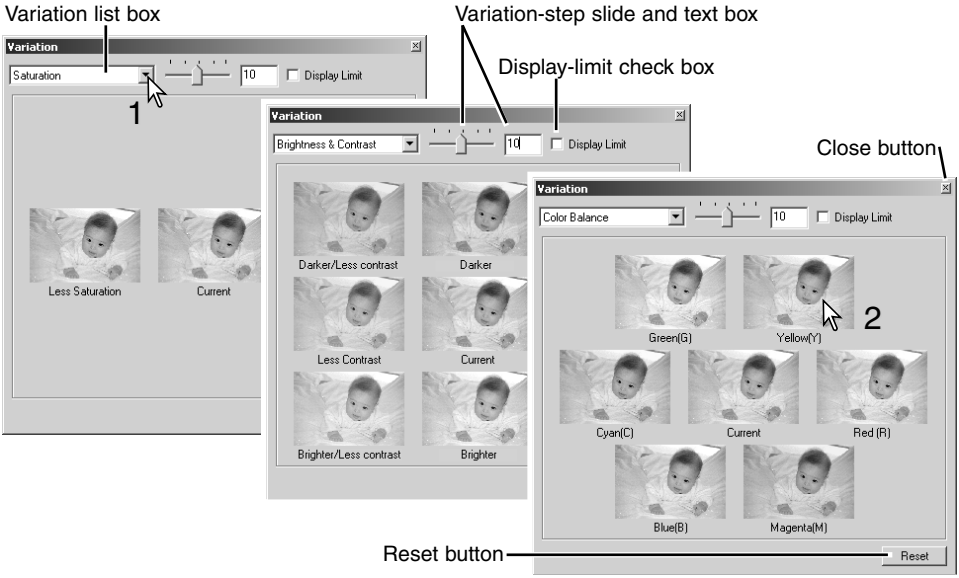
The introduction to color section on page 90 covers basic information about RGB and CMY, as well as more on complementary colors.

Variation palette

The variation palette allows an image to be corrected by comparing it to other slightly corrected images surrounding it. This is an easy method to correct images for individuals who are inexperienced in image processing or photofinishing.

Click the variation button to display the palette.

Click the arrow next to the variation list box (1) to select the image quality to be corrected: color balance, brightness and contrast, or saturation. Each variation palette shows the current image in the center with corrected sample images displayed around it.



Click the best image among the frames (2). The selected image becomes the new center surrounded by a set of new images and the change is applied to the prescan image. This procedure can be repeated until the desired correction is obtained. Click the reset button to cancel any changes.

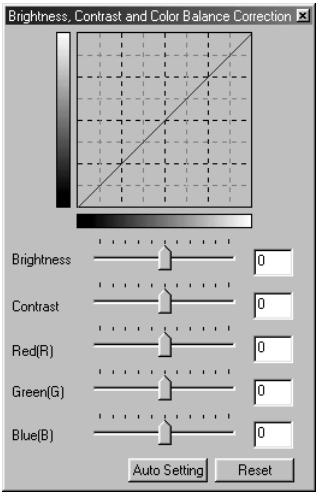
The difference between the images can be changed. Drag the variation-step slider, or enter a value into the text box to set the degree of correction. The initial setting is 10. The correction step can be set between 1 and 20.

Checking the display-limit check box will indicate when any of the image values exceed 0 (black limit) or 255 (white limit) with the complementary color. For example, if the blue area of the image exceeds those values, the limit is displayed with the complementary color, yellow.

Click the close button to close the palette and apply any image corrections.

Brightness, contrast, and color balance palette

Click the brightness, contrast, color-balance button to display the palette.



Drag the brightness, contrast, or color sliders, or enter specific values in the corresponding text box to make corrections. Dragging each slider to the right or inputting a positive number in the text box increases the brightness, contrast, and color.

Changes will be reflected in the displayed image and in the graph at the top of the palette. The horizontal axis of the chart indicates the original image values and the vertical axis the new values. Click the reset button to cancel any changes.

Clicking the auto-setting button corrects the brightness and contrast automatically without affecting the color balance. Click the reset button to cancel the changes.

Is this picture too light? Adjusting brightness and contrast can be more difficult than it looks. The image on the right looks too bright, especially the mountains in the background.

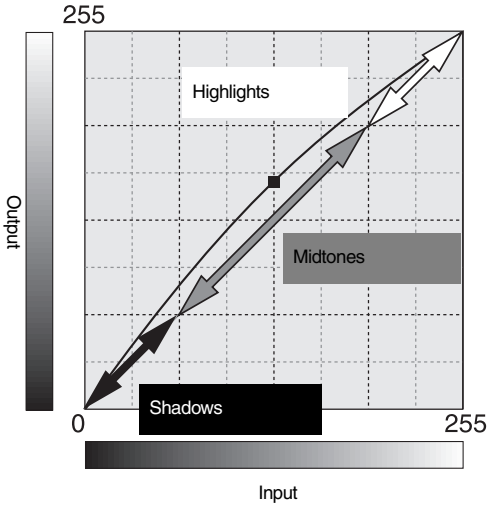
Simply making everything darker with the brightness controls creates a muddy image – the snow and sky are a dull gray and there are no strong blacks.

By adding contrast to the image, the snow is brightened while the darker trees are accentuated. The extra contrast also gives the image the appearance of being sharper as well as revealing fine details.

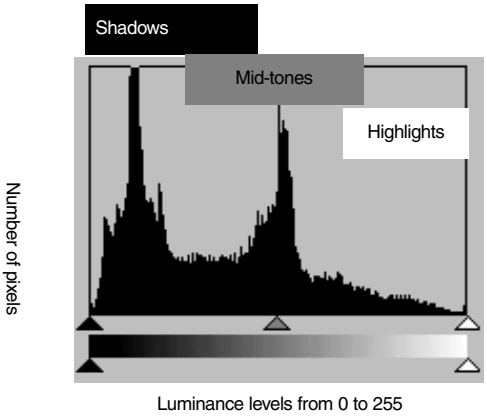
Tone curve and histogram corrections

The tone curve is a graphic representation of the brightness and color levels of the image. The bottom axis is the 256 levels of the original image (input data) from black to white. The vertical axis is the corrected image (output data) with the same scale from top to bottom.

The bottom left portion of the graph represents the dark colors and shadow areas of the image. The middle section represents the mid-tones: skin, grass, blue sky. The top right section is the highlights: clouds, lights. Changing the tone curve can affect the brightness, contrast, and color of the image.

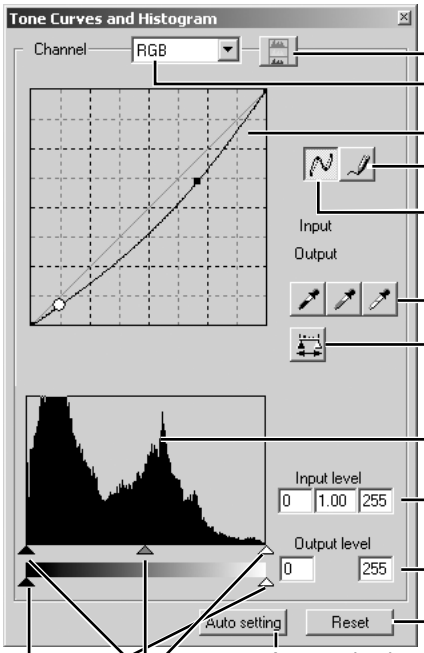


The histogram indicates the distribution of pixels with specific brightness and color values in the image. Using the histogram can maximize the output of the image data. Changes made with the histogram are also displayed on the tone curve.



Tone curve and histogram palette

Click the tone-curve/histogram button to display the palette.



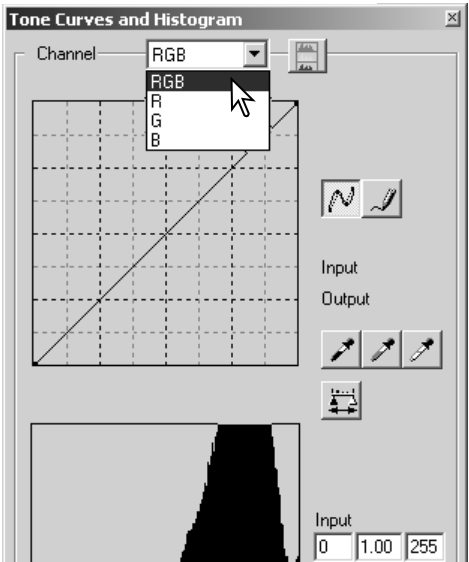
Color-histogram button (p. 77)
Channel list box (p. 72)
Tone curve
Freehand curve button (p. 73)
Smooth curve button (p. 73)
White, gray, and black-point buttons (p. 78)
Apply button (p. 78)
Histogram
Input shadow, gamma, and highlight text boxes (p. 76)
Output shadow and highlight text boxes (p. 76)
Reset button
Auto-setting button (p. 77)
Input shadow, gamma, and highlight sliders (p. 76)
Output shadow and highlight sliders (p. 76)

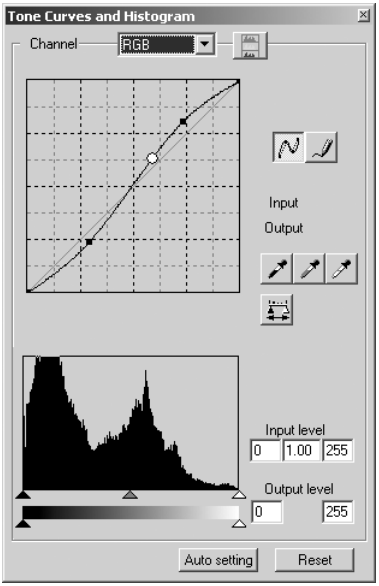
Using tone curves

Click the arrow next to the channel-list box to select the channel from the drop-down menu.

To make adjustments to the color balance of the image, select the appropriate color channel. To adjust the contrast or brightness of the image without affecting the color, select the RGB channel.

The tone curves can be displayed with keyboard shortcuts. While holding the control key (Windows) or command key (Macintosh), press 0 (zero) to display the RGB channel, 1 to display the red channel, 2 to display the green channel, or 3 to display the blue channel





Place the mouse pointer over the tone curve. Click and drag the curve. Any corrections made on the tone curve are immediately applied to the displayed image.

Each time the tone curve is clicked, a node is attached to the curve. The nodes can be moved by clicking and dragging. The horizontal axis (input level) represents the brightness levels of the original image, and the vertical axis (output level) the change applied to the image.

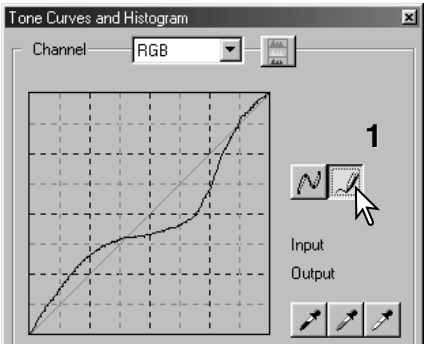
By placing the mouse pointer on the display image, the grey or color level of that point will be indicated on the tone curve by a white circle.

The reset button cancels all corrections in all channels.

Drawing tone curves by freehand

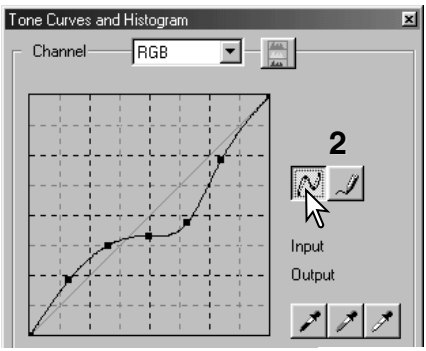
Click the freehand curve button (1). The mouse pointer changes to the pencil tool when placed on the tone curve.

Click and drag the pointer to draw a new curve. Extreme image manipulations are possible with the freehand curve tool.



To smooth a rough freehand curve, click the smooth-curve button (2). Nodes will be automatically placed on the curve and can be adjusted with the mouse.

With extreme freehand curves, the smooth curve button may significantly change the shape of the curve. Press the undo button to return to the original freehand curve.

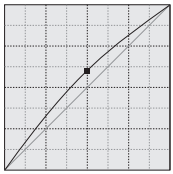


A short guide to tone curve corrections

Image processing is a highly specialized and difficult field that takes years of practice to master. This basic guide to using tone curves covers a few simple procedures to improve your pictures. For more about digital-image processing, consult your local book dealer about self-help guides on this subject.

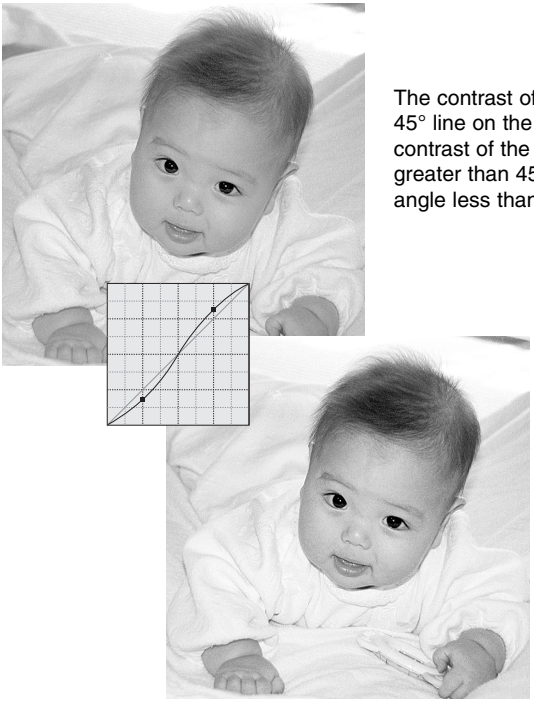
Bringing out detail in the shadows

This is a simple technique to make a subject hidden in the shadows brighter. Unlike the brightness level control (p. 70), this method of correction will not loose details in the highlight areas of the image.



With the RGB channel selected, place the smooth-curve cursor on the center of the curve. Click and drag the curve up. Look at the displayed image to judge the result. The adjustment can be very small and still have a significant impact on the image. Moving the tone curve down will make the image darker.

Increasing image contrast



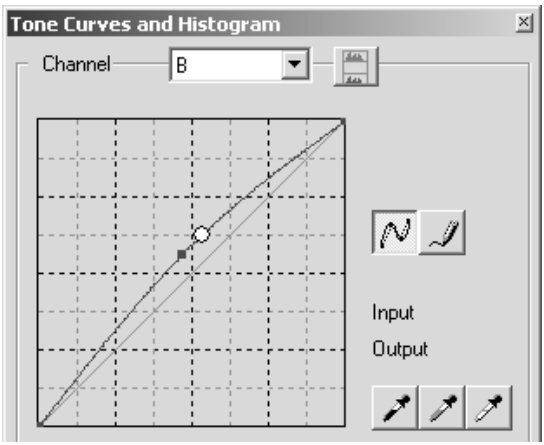
The contrast of an image can be changed. The light blue 45° line on the tone-curve graph represents the original contrast of the image. Making the angle of the tone curve greater than 45° will increase the contrast. Making the angle less than 45° will reduce the contrast.

With the RGB channel selected, click on the tone curve near the top and bottom to add two nodes. Slightly move the top node up and the bottom node down. This will increase the angle of the central portion of the tone curve and increase the contrast of the image without making an overall change in image brightness.

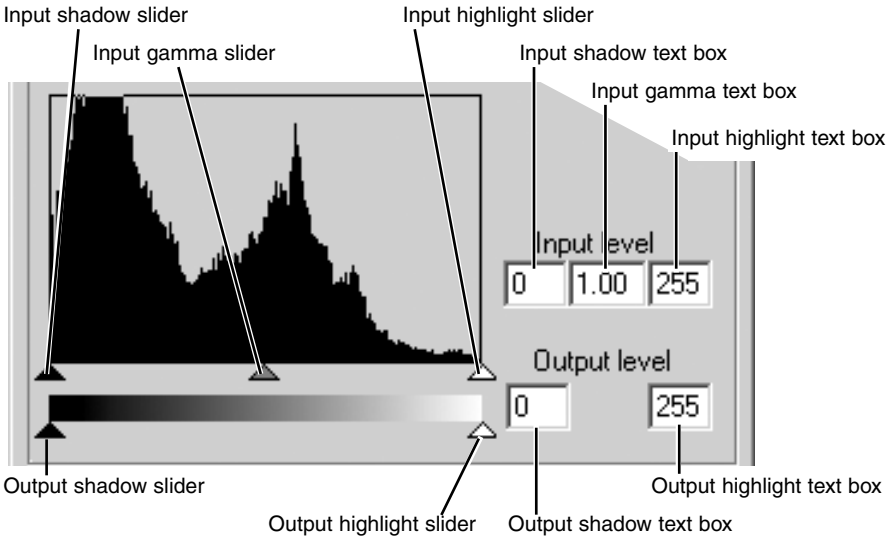
Correcting color

By selecting individual color channels on the tone curve, adjustments to the overall color of an image can be made. This can be used to eliminate unnatural color casts or add warmth to a picture.

If the image is too red, green, or blue, simply drag the corresponding color-channel curve down until the color appears natural. If the color cast is predominantly one of the secondary colors, cyan, magenta, or yellow, move the curve of the complementary color up. For example, if the image is too yellow, move the blue curve up, see the color example on page 2. For more on complementary colors, see page 90 and 91.



Histogram corrections



The color histograms can be displayed with the channel list box or with keyboard shortcuts. While holding the control key (Windows) or command key (Macintosh), press 0 (zero) to display the RGB channel, press 1 to display the red channel, 2 to display the green channel, 3 to display the blue channel.

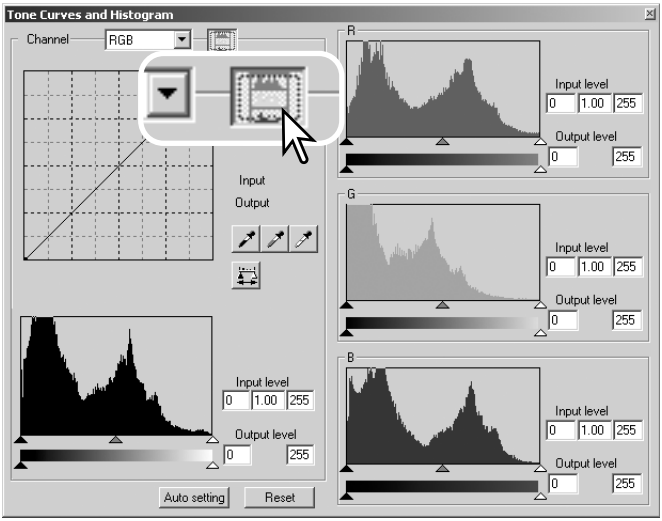
The histogram can be used to maximize the distribution of the pixels in the image. The highlight level, shadow level, and gamma can be set manually with the sliders or text boxes.

The input gamma slider defines the mid-tones of the image. Dragging the input gamma slider to the right will darken the image, and dragging it to the left will brighten it. Similar to the tone-curve correction described on page 74, the input gamma slider allows the brightness of the image to be adjusted without loosing image information.

The input highlight slider sets the white level. As the slider is moved to the left, an apparent increase in contrast can be seen in the displayed image. All pixels to the right of the slider are set to 255 and any image detail they may contain will be lost. This can be an important tool for improving copy images of text on a white background. Uneven illumination, or faded or stained paper can be distracting when copying text or line art. By adjusting the white level, the imperfections of the white background can be eliminated leaving only the darker text visible.

The input shadow slider sets the black level. As the slider is moved to the right, an apparent increase in contrast can be seen in the displayed image. All pixels to the left of the slider are set to 0 and any image detail they may contain will be lost.

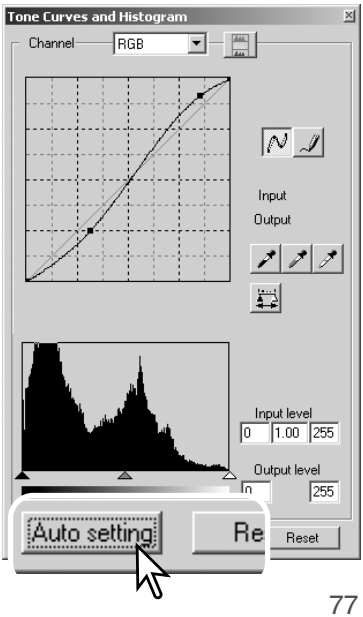
The black and white output levels can be adjusted. By moving the output highlight and shadow sliders, the contrast of the image can be reduced.



Click the color-histogram button to view the red, green, and blue histograms.

Click the histogram RGB display button again to close the color histogram display.

Tone curve / histogram auto setting



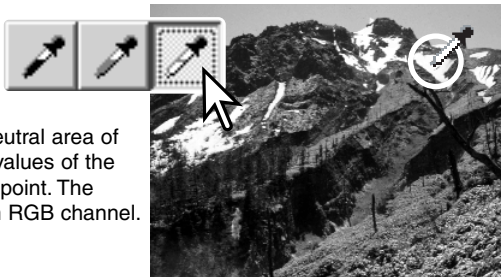
The auto-setting function automatically adjusts the tone curve and histogram to maximize image contrast and color. The darkest pixels in the image are set to a black level for 0, the brightest pixels are set to a white level of 255, and the rest of the pixels are distributed between them equally.

Click the auto-setting button. The change is immediately reflected in the displayed image. To view the change in the histogram, press the apply button. Click the reset button to cancel the auto setting.

White, gray, and black point corrections

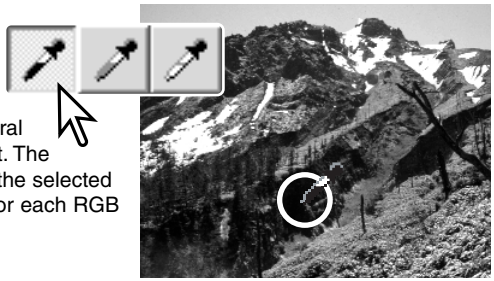
On the tone curve / histogram palette, corrections can be made by specifying a white, black, and gray point within the image. Locating an appropriate neutral area within the image is critical to correctly calibrate the software. When the dropper tool is selected, the RGB display is active and can be used to evaluate the image area. All changes are immediately reflected in the display image.

Click the white-point button; the mouse pointer changes to the white dropper tool.



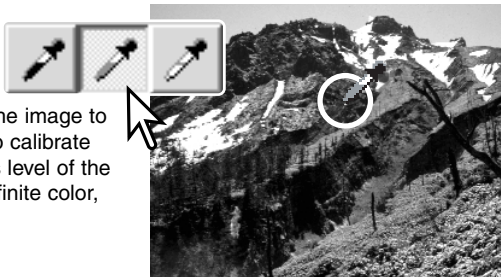
With the dropper tool, click on the brightest neutral area of the image to define it as the white point. The values of the image will be adjusted based on the selected point. The default level for the white point is 255 for each RGB channel.

Click the black-point button.



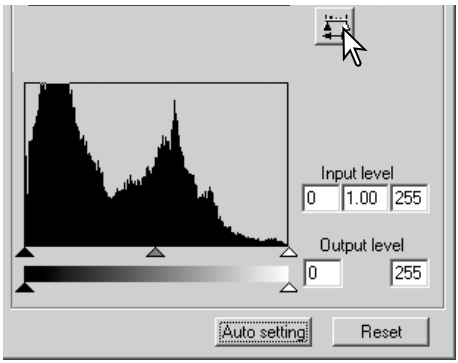
With the dropper tool, click on the darkest neutral area of the image to define it as the black point. The values of the image will be adjusted based on the selected point. The default level for the black point is 0 for each RGB channel.

Click the gray-point button. The grey point controls the color of the image.



With the dropper tool, click a neutral area of the image to be defined as the gray point. The area used to calibrate the gray point must be neutral. The brightness level of the area is not important, but if the area has a definite color, the image will not be color balanced correctly.

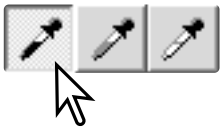
Click and hold the apply button to show the change on the histogram. Click the reset button to cancel all corrections.



Setting the white and black-point values

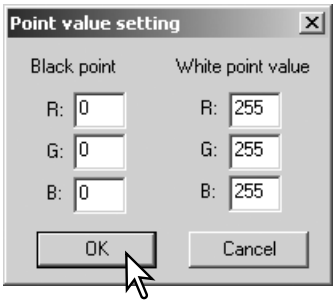
The white and black-point values are set to 255 and 0 for each RGB level. Changing these values allow the calibration of an image with no true white or black.

Double-click on either the white-point or black-point button to activate the point-value-setting dialog box.



Enter the new white-point or black-point values. Click OK.

With the point-value-setting dialog box open, the mouse pointer can be used to measure the color of any point on the displayed image. The RGB display shows the original values for the image on the left and the current values for the image on the right.



Calibrate the image as described in the white, black, and gray point corrections section.

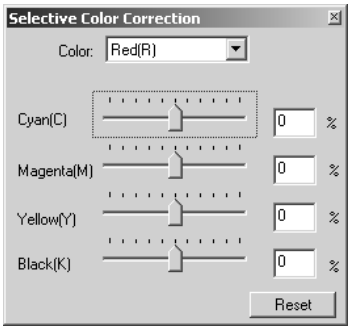
Selective-color palette

Selective-color correction is an advanced technique to refine the colors in the image. A cyan, magenta, yellow, and black channel can be used to adjust the six separate color groups in the image: red, green, blue, cyan, magenta, and yellow. The black-level slider controls the brightness of the selected color group.This type of correction is effective in changing a specific color without influencing any of the other colors in the image. For example, if the sky looks purplish instead of blue, magenta can be reduced in the blue color group. See page 2 for a selective-color example.

Click the selective-color button to open the palette.

Select the color group to be corrected from the drop-down menu at the top of the window.

Drag a slider or enter a value in a text box to adjust the selected color group. More than one slider can be used to adjust the selected color. Changes will be reflected in the display image. Click the reset button to cancel any changes.

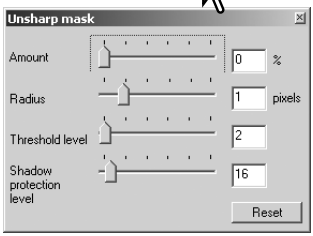


Unsharp mask

The unsharp mask sharpens edges in the image without affecting overall image contrast. This mask can be used with soft or slightly out-of-focus images. The effect of the unsharp mask is very subtle, but makes a significant improvement to the overall appearance of the image.

Click the unsharp-mask button to open the unsharp-mask dialog box.

Drag the sliders or enter values in the text boxes to adjust the parameters of the mask. The full effect of the unsharp mask cannot be evaluated in the prescan image. It can only be judged in the final scan.



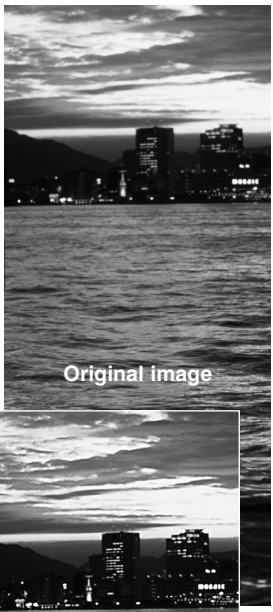
The result of the unsharp mask differs with image resolution. Make several scans with slight changes to the settings until the intended result is produced. Clicking the reset button restores the default settings.

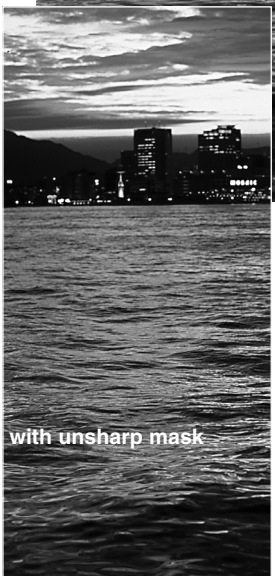
Amount: to adjust the contrast of the mask between 0% and 500%. If the value is too high, pixilation will be apparent; the image becomes noticeably rough or grainy. 150% to 200% is recommended for highly quality printed images.

Radius: to increase the edge sharpness of the pixels. The radius can be adjusted between 0.1 and 5. The default setting is 1. Changes to the radius are more apparent on printed images, than images displayed on a monitor. A level of 1 to 2 is recommended for highly quality printed images.

Threshold level: adjusted in integers between 0 and 255. The default setting is 2. If the difference between the surrounding pixels is greater than the threshold level, that pixel is recognized as a sharp subject pixel. When the level is set to 0, the whole image is corrected. The threshold level can separate smooth or even areas from edges and detailed areas to be sharpened.

Shadow protection level: to limit the sharp subject pixels in the shadows. The level can be adjusted in integers between 0 and 255. The default setting is 16. When the luminance level is greater than the shadow protection level, that pixel is recognized as a sharp pixel.

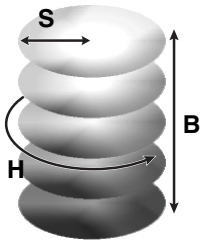




Hue, saturation, and lightness palette

This palette adjusts the image in reference to the HSB color model. These controls can be used to manipulate the color image rather than producing a realistic representation.

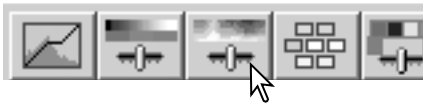
The HSB color model defines color based upon human perception rather than photographic processes. Hue refers to each separate color in the model. Saturation is how vivid each colors is. Lightness describes how bright or dark a color is in the color space.



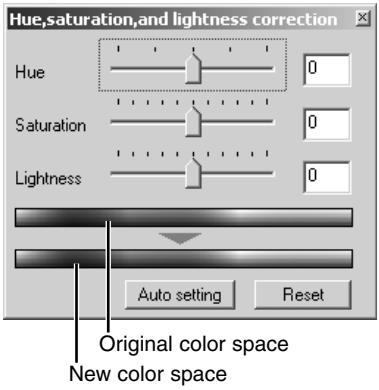
The hue control is not a color balancing tool. It is a creative tool. When changing hue in the palette, each color is assigned a new hue depending on the degree of rotation through the color space. For example, a very simple color space could have three colors: red, green, and blue. I have a red barn next to a green tree with a blue sky. Now I rotate the my image in the color space; the colors are reassigned a new hue based on the position – the barn is green, the tree is blue, and the sky is red. The HSB color space is similar, but with many more hues; see the color example on page 91.

Unlike the brightness control in the brightness, contrast, color balance palette, the lightness control does not change the apparent density of the colors equally. For example, with an extreme increase in lightness, blue will not appear as light as yellow.

Click the hue, saturation, and lightness button to open the palette.



Drag the hue, saturation, or lightness slider, or enter specific values in the corresponding text box to make corrections; changes will be reflected in the display image. Dragging each slider to the right or inputting a positive number in the text box increases the saturation, and lightness. The hue slider rotates the colors in the image through the color space; the maximum position to the right (180°) is the same as the maximum position to the left (–180°). Click the reset button to cancel any changes.



Two color samples are displayed at the bottom of the palette. The top bar indicates the color space of the original image. The bottom bar displays the relative changes to the color space.

Clicking the auto-setting button adjusts the saturation automatically without affecting the hue or lightness. Click the reset button to cancel any changes.

Jobs can be used to make scan settings based on the final use of the image. See making-the-final-scan using Job section in page 42. The following charts list the parameters of the scanner's Job files based on the film format selected in the main window:

35mm film

Category	Job Name	Input Res.	Output Res.	Mag.	Unit	Input Size W	Input Size H	Input Lock	Output Size W	Output Size H	Output Lock
Default	Default	705	300	235	pixel	1008	672	OFF	1008	672	OFF
ColorLaserPrinter	A4Quarter	2602	600	433	mm	34.18	24.25	OFF	148	105	ON
	A4Eighth	1846	600	307	mm	34.2	24.27	OFF	105	74.5	ON
	LetterQuarter	2676	600	446	inch	1.22	0.95	OFF	5.45	4.25	ON
	LetterEighth	1990	600	331	inch	1.22	0.95	OFF	4.05	3.16	ON
Photosensitive	A5Full	2445	400	611	mm	34.37	24.22	OFF	210	148	ON
	LetterHalf	2378	400	594	inch	1.43	0.92	OFF	8.5	5.45	ON
	LetterQuarter	1784	400	446	inch	1.22	0.95	OFF	5.45	4.25	ON
	2L	2099	400	524	mm	33.97	24.24	OFF	178	127	ON
	PostCard4x6	1679	400	419	inch	1.43	0.95	OFF	6	4	ON
Ink-Jet & Dye-SubPrinter	A4Full	2602	300	867	mm	34.26	24.22	OFF	297	210	ON
	A4Half	1834	300	611	mm	34.37	24.22	OFF	210	148	ON
	A4Quarter	1301	300	433	mm	34.18	24.25	OFF	148	105	ON
	A4Eighth	923	300	307	mm	34.2	24.27	OFF	105	74.5	ON
	LetterFull	2676	300	892	inch	1.22	0.95	OFF	10.9	8.5	ON
	LetterHalf	1784	300	594	inch	1.43	0.92	OFF	8.5	5.45	ON
	LetterQuarter	1338	300	446	inch	1.22	0.95	OFF	5.45	4.25	ON
	LetterEighth	995	300	331	inch	1.22	0.95	OFF	4.05	3.16	ON
	Photo4x6	1239	300	413	mm	36.32	24.21	OFF	150	100	ON
	Photo3x5	1103	300	367	mm	34.61	24.25	OFF	127	89	ON
WebPage	1240x836	878	72	1219	pixel	1240	836	OFF	1240	836	ON
	1112x750	787	72	1093	pixel	1112	750	OFF	1112	750	ON
	984x663	696	72	966	pixel	984	663	OFF	984	663	ON
	792x534	561	72	779	pixel	792	534	OFF	792	534	ON
	760x512	538	72	747	pixel	760	512	OFF	760	512	ON
	600x404	424	72	588	pixel	600	404	OFF	600	404	ON
	320x240	252	72	350	pixel	320	240	OFF	320	240	ON
PhotoCD	PhotoCD2048x3072	2149	300	716	pixel	3072	2048	OFF	3072	2048	ON
	PhotoCD1024x1536	1075	300	358	pixel	1536	1024	OFF	1536	1024	ON
	PhotoCD512x768	538	300	179	pixel	768	512	OFF	768	512	ON
Screen	1920x1200	1343	72	1865	pixel	1920	1200	OFF	1920	1200	ON
	1600x1200	1259	72	1748	pixel	1600	1200	OFF	1600	1200	ON
	1280x1024	1075	72	1493	pixel	1280	1024	OFF	1280	1024	ON
	1280x960	1008	72	1400	pixel	1280	960	OFF	1280	960	ON
	1152x870	913	72	1268	pixel	1152	870	OFF	1152	870	ON
	1024x768	806	72	1119	pixel	1024	768	OFF	1024	768	ON
	832x624	655	72	909	pixel	832	624	OFF	832	624	ON
	800x600	630	72	875	pixel	800	600	OFF	800	600	ON
	640x480	504	72	700	pixel	640	480	OFF	640	480	ON
Document	A4Half	440	72	611	mm	34.37	24.22	OFF	210	148	ON
	A4Quarter	312	72	433	mm	34.18	24.25	OFF	148	105	ON
	A4Eighth	220	72	305	mm	34.43	24.26	OFF	105	74	ON
	LetterHalf	429	72	595	inch	1.43	0.92	OFF	8.5	5.45	ON
	LetterQuater	322	72	447	inch	1.22	0.95	OFF	5.45	4.25	ON
	LetterEighth	215	72	298	inch	1.43	0.91	OFF	4.25	2.72	ON
FilmRecorder	2K	1433	2400	59	pixel	2048	1365	OFF	2048	1365	ON

APS film

Category	Job Name	Input Res.	Output Res.	Mag.	Unit	Input Size W	Input Size H	Input Lock	Output Size W	Output Size H	Output Lock
Default	Default	705	300	235	pixel	832	480	OFF	832	480	OFF
ColorLaserPrinter	A4Eighth	2584	600	430	mm	24.42	17.33	OFF	105	74.5	ON
	LetterEighth	2785	600	464	inch	0.87	0.68	OFF	4.05	3.16	ON
Photosensitive	A5Full	2820	400	705	mm	29.79	17.3	OFF	210	121.95	ON
	LetterQuarter	2497	400	624	inch	0.87	0.68	OFF	5.45	4.25	ON
	2L	2820	400	705	mm	25.25	17.3	OFF	178	121.95	ON
	PostCard4x6	2350	400	587	inch	1.02	0.68	OFF	6	4	ON
Ink-Jet & Dye-SubPrinter	A4Half	2568	300	856	mm	24.53	17.29	OFF	210	148	ON
	A4Quarter	1822	300	607	mm	24.38	17.3	OFF	148	105	ON
	A4Eighth	1292	300	430	mm	24.42	17.33	OFF	105	74.5	ON
	LetterHalf	2402	300	800	inch	1.06	0.68	OFF	8.5	5.45	ON
	LetterQuarter	1873	300	624	inch	0.87	0.68	OFF	5.45	4.25	ON
	LetterEighth	1393	300	464	inch	0.87	0.68	OFF	4.05	3.16	ON
	Photo4x6	1735	300	578	mm	25.95	17.3	OFF	150	100	ON
	Photo3x5	1544	300	514	mm	24.71	17.32	OFF	127	89	ON
WebPage	1240x836	1228	72	1705	pixel	1240	836	OFF	1240	836	ON
	1112x750	1102	72	1530	pixel	1112	750	OFF	1112	750	ON
	984x663	974	72	1352	pixel	984	663	OFF	984	663	ON
	792x534	785	72	1090	pixel	792	534	OFF	792	534	ON
	760x512	752	72	1044	pixel	760	512	OFF	760	512	ON
	600x404	594	72	825	pixel	600	404	OFF	600	404	ON
	320x240	353	72	490	pixel	320	240	OFF	320	240	ON
PhotoCD	PhotoCD1024x1536	1504	300	501	pixel	1536	1024	OFF	1536	1024	ON
	PhotoCD512x768	752	300	250	pixel	768	512	OFF	768	512	ON
Screen	1920x1200	1763	72	2448	pixel	1920	1200	OFF	1920	1200	ON
	1600x1200	1763	72	2448	pixel	1600	1200	OFF	1600	1200	ON
	1280x1024	1504	72	2088	pixel	1280	1024	OFF	1280	1024	ON
	1280x960	1410	72	1958	pixel	1280	960	OFF	1280	960	ON
	1152x870	1278	72	1775	pixel	1152	870	OFF	1152	870	ON
	1024x768	1128	72	1566	pixel	1024	768	OFF	1024	768	ON
	832x624	917	72	1273	pixel	832	624	OFF	832	624	ON
	800x600	882	72	1225	pixel	800	600	OFF	800	600	ON
	640x480	705	72	979	pixel	640	480	OFF	640	480	ON
Document	A4Half	616	72	855	mm	24.56	17.31	OFF	210	148	ON
	A4Quarter	437	72	606	mm	24.42	17.33	OFF	148	105	ON
	A4Eighth	307	72	426	mm	24.65	17.37	OFF	105	74	ON
	LetterHalf	576	72	800	inch	1.06	0.68	OFF	8.5	5.45	ON
	LetterQuarter	450	72	625	inch	0.87	0.68	OFF	5.45	4.25	ON
	LetterEighth	287	72	398	inch	1.07	0.68	OFF	4.25	2.72	ON
FilmRecorder	2K	2005	2400	83	pixel	2048	1365	OFF	2048	1365	ON

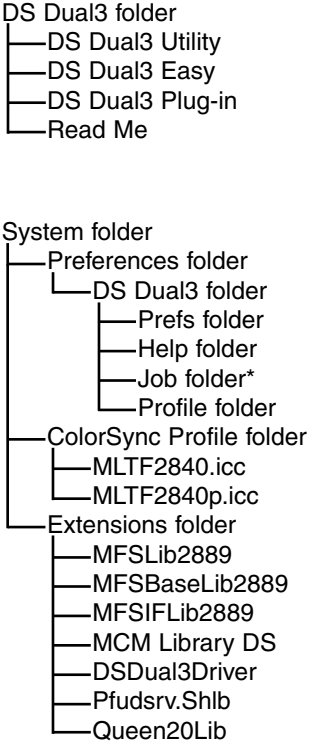
INSTALLED FILES AND FOLDERS

When installing the utility software, the following files and folders are installed:

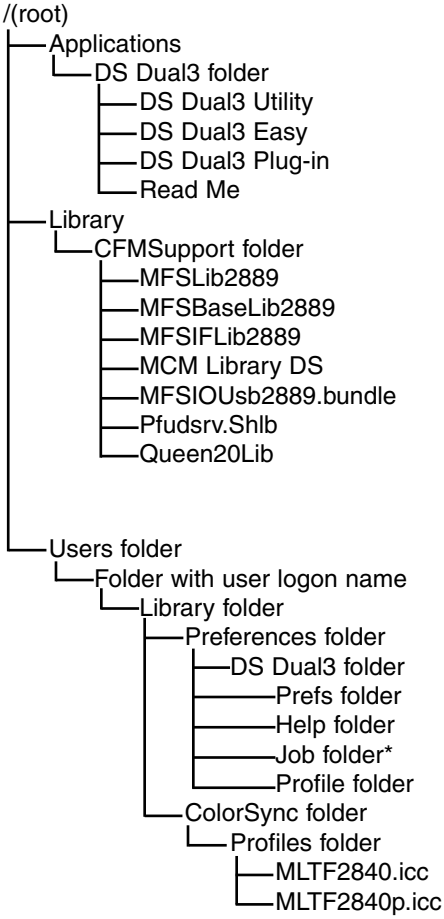
Windows

- C:
  - Program Files
    - DS_Dual3 folder
      - DS_Dual3.exe
      - DS_Dual3Easy.exe
      - Readme.txt
      - Exporter folder
      - Help folder
      - Job folder*
      - Profile folder
      - Prefs folder
      - EasyScan folder
  - Windows folder (98, 98SE, Me) or WINNT folder (2000 and XP)
    - Twain.dll
    - Twain_32.dll
    - Twunk_16.exe
    - Twunk_32.exe
    - System folder (98, 98SE, Me)
      - MFSLib2889.dll
      - MFSBaseLib2889.dll
      - MFSIFLib2889.dll
      - MCMLDS.dll
      - Pfudsrv.dll
      - PQueen20.dll
      - Color folder
        - MLTF2840.icc
        - MLTF2840p.icc
    - System32 folder (2000 and XP)
      - MFSLib2889.dll
      - MFSBaseLib2889.dll
      - MFSIFLib2889.dll
      - MCMLDS.dll
      - Pfudsrv.dll
      - PQueen20.dll
      - Spool folder
        - Drivers folder
          - Color folder
            - MLTF2840.icc
            - MLTF2840p.icc
    - Twain_32
      - DS_Dual3
        - DS_Dual3.ds

Mac OS 8.6, 9.2.2



Mac OS X



* The Job files are included in Job-category folders in the Job folder. When a new Job file is saved, it is placed in the directory of category specified.

TROUBLESHOOTING AND TECHNICAL SUPPORT

This section covers minor problems with scanner operation. For major problems or damage, or if a problem continues to reoccur frequently, contact your dealer or a Minolta service facility.

SYMPTOM or MESSAGE	SOLUTION
When starting up the utility software, Error=4 – could-not-confirm-scanner-connection message appears.	Confirm the cable is securely connected between the computer and scanner. Turn the scanner off and on. Click OK to continue.
When starting up the utility software, an error message appears.	Close the scanner door. Click OK to continue.
• The utility software freezes. • The scanning time increases.	Turn off the scanner. Shut down the image-processing application and increase its memory allocation. Restart the computer and scanner.
Unusual image color when scanning color negative film.	Confirm color negative film is selected in the main window, and rescan the image, or color balance the image using the DiMAGE Scan Dual III Utility's image-processing tools. If the problem is not solved, reinstall the scanner utility software.
The scanned image is not sharp.	Select an autofocus option in the preference window, or use point AF or manual focus.
Cannot-verify-home-position message appears during scanning.	The film holder was hindered during the scan. Turn off the scanner, and restart the computer.
Cannot scan APS film, and initial loading failed. The error-during-film-transportation or error-during-rewind message appears.	Press the eject button on the scanner, and remove the APS adapter after rewinding is completed. Reinsert the holder into the scanner. If the problem persists, remove the adapter and do not insert it again; it may damage the film or scanner.
The scanner indicator lamp blinks rapidly.	Close the door, and shut down and restart the scanner, utility, and application.
The set-holder message appears.	Reload the holder into the scanner.
The holder-does-not-match-selected-film message appears.	Set the correct film format in the DiMAGE Scan Dual III Utility or insert the correct holder into the scanner.
The film-not-found-in-APS-holder message appears.	Insert an APS cassette into the APS adapter.
The preview image displays unusual color reproduction.	Remove the film holder and close the scanner door. Press shift+control+I (Windows) or command+shift+I (Macintosh) to reinitialize the scanner.
For Macintosh When Pixel Polish is active, the image blacks out or "Insufficient memory. Pixel Polish processing failed," message appears.	Increase the amount of the system's largest unused block of memory to more than 128MB. See instructions on the facing page.

Pixel Polish and Mac OS

About This Computer
Mac OS 9.2
Version: Mac OS Z1-9.2.2
Built-in Memory: 512 MB
Virtual Memory: 513 MB used on 9.2.2E
Largest Unused Block: 87.4 MB
™ & © Apple Computer, Inc. 1983-2001
Adobe® Photoshop® 5.5 390.7 MB
Mac OS 41.5 MB

Largest unused block of memory must be more than 128MB.

With Macintosh operating systems, to use Pixel Polish when the utility is launched through Photoshop or Photoshop Elements, the largest unused block of memory in the system must be more than 128 MB.
With the Photoshop application open, check the amount of the largest unused block of memory before launching the utility. If the block of memory is less than 128 MB, use one of the following method to increase the volume:

- Close all other application running.
- Decrease the memory allocation to Photoshop; the memory allocated must not be reduced below 128 MB of RAM plus the requirements for the application, see scanner system requirements on page 11.
- Increase the virtual memory. Add enough memory to the amount of the actual unused block of memory so that the total volume exceeds 128 MB.

Refer to Mac OS help to check the largest unused block of memory, to change the memory allocation of an application, and to set the virtual memory.

Checking Scanner Installation (Windows)

If the scanner was connected to the computer and turned on before the utility software was installed, the computer may not recognize the scanner unit even after the utility software is installed. Follow the instructions below to confirm the scanner driver is installed correctly.

1 *Windows 98, 2000, Me:* right click on the my-computer icon. Select “properties” from the drop-down menu.
Windows XP: from the start menu go to the control panel. Click on the performance and maintenance category. Click the system button to open the system properties window.

2 *Windows 2000 and XP:* select the hardware tab in the properties window and click the device-manager button.
Windows 98 and Me: click the device-manager tab in the properties window.

3 The driver file should be located in the imaging-device location of the device manager. Click on the location to display the files. “DS_Dual3” should be listed as the imaging device.
If “DS_Dual3” is not located in the imaging device location, open other-devices location of the device manager. “DS_Dual3” should be listed there. Follow the instructions on the next page to delete the driver.

How to delete the driver.

1 Click on the driver to select it for deletion.
2 *Windows 98 and Me:* click the remove button. A confirmation screen will appear. Clicking the yes button will remove the driver from the system.
Windows 2000 and XP: click on the action button to display the drop-down menu. Select uninstall. A confirmation screen will appear. Clicking the yes button will remove the driver from the system.
3 Restart the computer. Check the scanner driver is in the proper location by following step 1 through 3 at the top of the page.

Windows 2000 Professional and XP users should log on with the administrator privilege. With Windows 2000 Professional, the “Digital signatures not found” message may appear when the computer first detects the scanner. With Windows XP, the message “Installing hardware… Windows log test is not passed” may appear. Simply click the OK (2000) or continue (XP) button.

Technical support

Please contact your dealer for information regarding installation, USB interface recommendations, or application compatibility. If your dealer is unable to help you, contact an authorized Minolta service facility. Please have the following information ready when calling Minolta technical support:

1 The name and model of your computer.
2 The available application RAM.
3 Other connected USB devices.
4 The name and model of the USB port used to connect the scanner.
5 DiMAGE Scan Dual III Utility version number. The version number is displayed by placing the mouse pointer on the status bar in the main window.
6 A description of the problem.
7 Any message that appears on the screen when the problem occurs.
8 The frequency of occurrence.

Warranty and product registration

Please take the time to fill in the warranty and product registration card. Technical support, scanner software upgrades, and product information is available when the product is registered.

TECHNICAL SPECIFICATIONS

Scan type:	Moving film, fixed sensor, single-pass scan
Film type:	Color / B&W, Negative / positive
Film formats:	Mounted and unmounted 35mm film, Mounted APS film. APS cassette with optional AD-10 adapter.
Maximum scan size:	35mm film: 24.21 x 36.32 mm APS film: 17.29 x 29.98 mm
Maximum input pixels:	35mm film: 2688 x 4032 APS film: 1920 x 3328
Optical input resolution:	2820 dpi
Sensor type:	3-line color CCD
Number of pixels:	2,700 pixels per line
A/D conversion:	16 bit
Color depth:	8 bit and 16 bit per color channel
Dynamic range:	4.8
Light source:	Cold cathode fluorescent tube
Focusing:	Autofocus, Point AF, Manual focus
Other:	Auto Dust Brush and Pixel Polish image processing
PC interface:	USB 2.0 (USB 1.1 compatible) with type-B receptacle connector
Power consumption:	30 W (max.)
Power requirements:	100-120V AC, 50/60Hz for North America, Taiwan, and Japan 200-240V AC, 50Hz for England, Hong Kong, and China 200-240V AC, 50/60Hz for continental Europe, Oceania, and Asia (except for Taiwan, Japan, Hong Kong, and China) With supplied AC adapter. The adapter unit varies with the destination.
Dimensions :	145 (W) x 100 (H) x 320 (D) mm / 5.7 (W) x 3.9 (H) x 12.6 (D) in
Weight:	1.5 kg / 3.3 lb (approx.)
Operating environment:	10° – 35°C / 50° – 95°F, 15 – 85% humidity without condensation
Storage environment:	-20° – 60°C / -4° – 140°F, 10 – 85% humidity without condensation
Scan times :	Approximate time with 35mm color positive film, 2820 dpi input resolution, 8-bit color depth, no cropping, no autoexposure, no color matching, no Auto Dust Brush, no image corrections:

	Windows	Macintosh
Prescan	5 s	6 s
Scan	30 s	48 s

System test environment:

	Windows	Macintosh
OS	Windows Me	Mac OS 9.2.2
CPU	Pentium 4 1.5 GHz	PowerPC G4 800 MHz
RAM	512 MB	
Hard-disk space	2.57 GB	8.3 GB
Application	Adobe Photoshop 7.0	
Memory allocated to application	80%	450 MB
Interface	USB 2.0	USB 1.1

Scanning time changes according to the preferences used. Scanning time can be longer for negative film than positive film.

Specifications are based on the latest information available at the time of printing and are subject to change without notice.

Primary (RGB) and secondary (CMY) colors

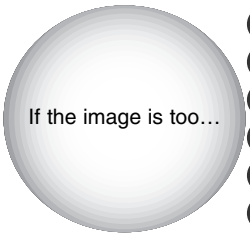
The RGB color model is an additive process that uses the primary colors of light: red, green, and blue. An additive color system mixes the three colors to recreate the entire spectrum of light. If all three colors are mixed, white light is produced. Television sets and computer monitors use RGB to create images.

The CMY color model is a subtractive process that uses the secondary colors: cyan, magenta, and yellow. A subtractive color system recreates color with pigments and dyes to absorb unwanted color. If all three colors are mixed, black is produced. Film-based photography is a subtractive process. Printing technology is also a subtractive process, but, unlike photographic systems, it requires a black channel (K). Because of the imperfections of printing inks, cyan, magenta, and yellow cannot produce a true black when mixed, printers use what is called a four-color process (CMYK) to reproduce images.

In photography, red, green, and blue are the primary colors. The secondary colors, cyan, magenta, and yellow, are made from combining the primary colors: cyan = blue + green, magenta = blue + red, and yellow = red + green. The primary and secondary colors are grouped in complementary pairs: red and cyan, green and magenta, and blue and yellow.

Complementary colors

Knowing the complementary colors is very important in color balancing. If the image has a specific color cast, either subtracting the color or adding its complementary color will create a natural looking image.

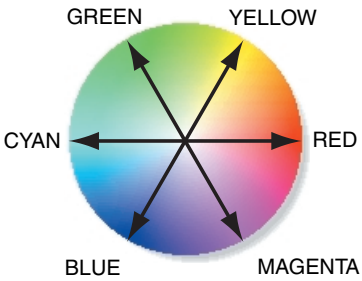


RED	Decrease the amount of red.
GREEN	Decrease the amount of green.
BLUE	Decrease the amount of blue.
CYAN	Increase the amount of red.
MAGENTA	Increase the amount of green.
YELLOW	Increase the amount of blue.

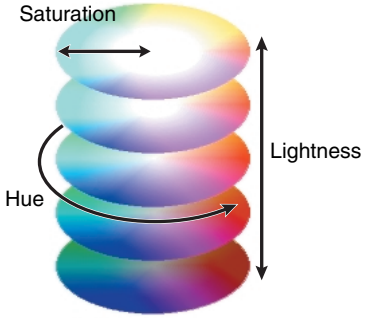
Adding or subtracting equal parts of red, green, and blue will have no effect on the color balance. However, it can change the overall image brightness and contrast. Usually, no more than two color channels are needed to color balance an image.

Color balancing is a skill that develops with practice. While the human eye is extremely sensitive in making comparative judgements, it is a poor tool when making absolute measurements of color. Initially, it can be very difficult to distinguish between blue and cyan, and red and magenta. However, adjusting the wrong color channel never improves an image; subtracting blue from an image that is too cyan will give a green cast to the image.

Complementary colors (p. 90)

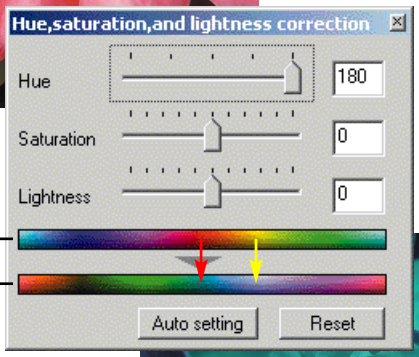


HSB color model (p. 81)



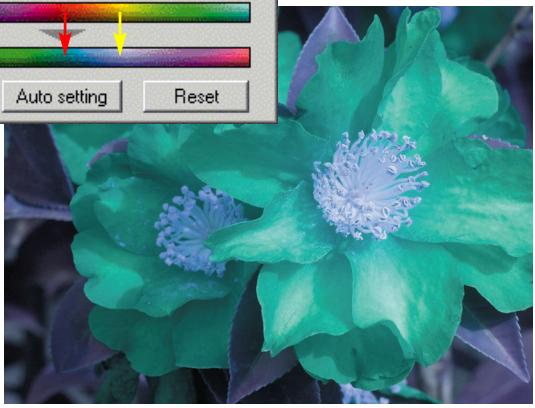
Hue corrections

Changes in hue rotate the original color values though a color space and reassigns a new hue based on the new position in that space. In this example, the original image was rotated 180°. For more on the hue, saturation, and brightness palette, see page 81.



Original color space

New color space



Two color spaces are displayed at the bottom of the palette. The top bar indicates the color space of the original image. The bottom bar displays the relative shift to the color space. In the example, the reds have been shifted to green and the yellows to lavender.

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